

NEW

"TO IMPROVE THE SOIL AND MIND."

SERIES.

VOL. IV.

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No. 1.

OUR PLATE—THE GALLOWAY CATTLE.

THE beautiful engraving accompanying this number, is the portrait of a four years old Galloway bull, belonging to the Duke of Buccleugh, which obtained the first prize of thirty sovereigns at the show of the Highland Agricultural Society of Scotland, in 1845. We presume there have never been but few, if any, of this valuable breed of cattle in this country, and our object at this time is to give a correct idea in regard to them. The notion seems to be entertained in some quarters, that all polled or hornless cattle are Galloways; hence we have sometimes seen it stated that there are Galloways in Massachusetts, though it is very evident, from the description, that the stock has but few characteristics in common with the breed under consideration. Most of the hornless cattle to be met with in this country, correspond more to the Suffolk and Yorkshire polled breeds, than to any others of which we have any knowledge, and though they have in general a mongrel character, and degenerate appearance, they are no doubt much nearer allied to the last named varieties, than to the Galloways, as will fully appear from the following description. The true Galloways are described by Low, Youatt, and other British writers, as being generally of a black color, though sometimes red, brindled, and dun; but the black being regarded as most indicative of the pure breed, other colors have become more rare than formerly. They are, says Youatt, straight and broad in the back, and nearly level from the head to the rump. They are round in the ribs, and also between the shoulders and the ribs, and the ribs and the loins. They are broad in the loins, without any large projecting hook (or hip) bones. In roundness of barrel and fullness of ribs, they will compare with any breed, and also in the proportion which the loins bear to the hook bones or protuberances of the ribs. When viewed from above, the body is said to appear beautifully rounded like the longitudinal section of a roller. "They are long in the quarters and ribs, and deep in the chest, but not broad in the twist. The slightest inspection will show that there is less space between the hip or hook bones and the ribs than in most other breeds, a consideration of much importance, for the advantage of length of carcass consists in the animal being well ribbed home, or as little space as possible lost in the flank."

"The Galloway is short in the leg, and moderately fine in the shank bones—the happy medium seems to be preserved, in the leg, which secures hardihood and a disposition to fatten. With the same cleanness and shortness of shank, there is no breed so large and muscular above the knee, while there is more room for the deep, broad, and capacious chest. He is clean, not fine and slender, but well proportioned in the neck and

chaps; a thin and delicate neck would not correspond with the broad shoulders, deep chest, and close compact form of the breed.

"The Galloway is covered with a loose mellow skin of medium thickness, and which is covered with a long, soft, silky hair. The skin is thinner than that of the Leicestershire, but not so thin as that of the improved Durham, but it handles soft and kindly. Even on the moorland, where the cattle, during the greater part of the year, are fed on the scantiest fare, it is remarkable how little their hides indicate the privations they endure."

The Galloway cows are not remarkable for giving a large quantity of milk, but it is very rich in quality, and yields a large proportion of butter. Mr. Youatt says, "a cow that gives from twelve to sixteen quarts of milk per day, [wine measure.] is considered a very superior milker, and that quantity produces more than a pound and a half of butter."

The Galloway breed of cattle is considered one of the mountains rather than the lower country. They derive their name from a district of country in Scotland, embracing portions of several counties. Mr. Youatt observes that "there is, perhaps, no breed of cattle which can more truly be said to be indigenous to the country, and incapable of improvement by any foreign cross, than the Galloways." The same remark is made by Prof. Low. "The breed of Galloway," says he, "is peculiarly confirmed in its characters, and thoroughly adapted to the condition of the country." There is no doubt of the correctness of these remarks, and hence it results that all efforts to improve the breed by crossing it with others, have proved unsuccessful. According to Mr. Culley, a cross was tried in Mr. Bakewell's time, with the Dishley variety of the Long Horns, and at a later day, improvements have been attempted with the Short Horns.

Prof. Low in allusion to this, says "efforts have from time to time been made to cross the breed by the Dishley Long Horns, the Ayrshires, and the modern Short Horns. These attempts, it is believed, have been all failures, in so far as they were designed to improve the general breed of the country; and modern breeders with better knowledge, have turned their attention to the improvement of the existing race." Mr. Youatt, in reference to the same subject, remarks, that the Short Horns have in many instances improved the stock of the districts where they have been introduced. "They have," he says, "at least in the first cross produced manifest improvement, although the advantage has not often been prolonged much beyond the second generation; but even in the first cross the Short Horns have done little good in Galloway, and as a per-

manent mixture the choicest southern [Short Horn] bulls have manifestly failed. The intelligent Galloway breeder is now perfectly satisfied that his stock can only be improved by adherence to the pure breed, and by care in selection."

The trade in stock from Galloway has been very extensive for 150 years, large numbers of cattle being annually sent to the English market. Prof. Low says, "It is computed that upwards of 20,000 head are annually exported from the district, from 16,000 to 18,000 of which are sold at Smithfield." They fatten as readily as the most celebrated breeds, and their beef is much esteemed in the English markets, the fat being well mixed with the muscular parts. Prof. Low says—"their average dead weight at three years old may be reckoned at 45 stones of 14 lbs. to the stone, [or 630 lbs.] and those sent to London weigh from 55 to 60 stones, [or 770 to 840 lbs.]"

From the characteristics of the Galloway cattle, as above given, we think there can be no doubt that they would be well adapted to a large portion of this country, and we should be much pleased to see them introduced here. In all situations in our northern states, where cattle are reared in a great degree for slaughter, we have good reason to believe that they would be found far more profitable than the stock now kept. A gentleman, distinguished for his knowledge of stock, who went to England a few years since for the purpose of making selections for a cattle importing company, stated to the writer, that had his object been to procure animals for the northern states, he should have chosen the Galloways and West Highlanders.

There is another matter connected with the Galloways, upon which it may not be improper to say a few words. They are generally regarded as having been one of the sources by which the Short Horn breed of cattle has been improved. We know the subject has been somewhat controverted, although if we may judge from publications, opinion in England is pretty well settled in favor of the position that the excellence of the Improved Short-Horns, is, in a considerable degree, to be attributed to a cross with the Galloways. The history of this cross has been frequently published, yet in connection with our main subject, we deem it not amiss to refer again briefly to the circumstances.

It appears from the best accounts which have been given, that when Mr. CHARLES COLLING adopted the Short Horns and commenced his course of breeding, in the latter part of the last century, he found that breed of cattle generally subject to some very prominent defects. "Like all other extravagantly large cattle," says the Rev. HENRY BERRY, "they were frequently of loose make and disproportion." He adds that Mr. COLLING, being sensible of the "difficulty of breeding, with anything like certainty, large good animals," was determined to reduce the size of the Short Horns, and at the same time and by that means, improve their form. With these objects in view, he resorted in the first place to the use of a bull called *Hubback*, an animal in relation to which there was formerly much controversy, principally in reference to the purity of his blood. Mr. COLLING is reported to have tried several crosses with the Kyloes, or West Highland cattle, previous to his experiment with the Galloways. The remarks of Mr. BERRY in regard to the circumstances which led to the trial with the last named breed, are of so important a character that we here transcribe them.

"It may be proper to observe," says Mr. B., "that no breed of cattle promised so successful a cross with the Short Horns as the Galloway. They were calculated, by their deep massive frames and short legs, to bring the Short Horns nearer the ground, and to dispose their weight in a more compact manner: their hardy habits would be essentially useful, and the quality of

their flesh and hair were such as to render the experiment still more safe. Add to this that they could [then] be obtained of a red color; and we are prepared to admit even without the sanction of a successful experiment, that they were admirably adapted to cross with the Short Horn, standing frequently too high from the ground, not very well ribbed home, and not seldom of loose disjointed frame."

To the Galloways therefore, Mr. COLLING resorted, and though his course met with little favor at the time, a few years experience served to establish his success almost beyond question. It appears that a very fine red polled Galloway cow was sent to Mr. COLLING's Short-Horn bull Bolingbroke; the produce was a bull-calf, which Mr. C. purchased, and at a proper age, he was put to Joanna, a pure Short-Horn cow, and her produce was also a bull calf to which was given the name of Grandson-of-Bolingbroke. He was the sire of the cow Lady, whose dam was Old Phoenix, a pure Short Horn. From Lady sprung the family of Improved Short Horns which were formerly called in reproach "the alloy." At the time of Mr. COLLING's celebrated sale, which took place in 1810, this family brought higher prices than any other family, and have generally been held in greater esteem since. Lady herself, though fourteen years old, brought 106 guineas, or \$530; Countess, her daughter, nine years old, 400 guineas, or \$2,000; Laura, another daughter, four years old, 210 guineas, or \$1,050; Major and George, two of her sons, the former three years old, the latter a calf, 200 guineas, and 130 guineas, or \$1,000, and \$650.

As good testimony in regard to the family of Lady, we give the statement of Major RUDD, a gentleman who was very intimate with the Messrs. COLLINGS, and who purchased the four highest priced animals, with the exception of the bull Comet, disposed of at Mr. COLLING's sale. Maj. RUDD in a communication to the *London Farmer's Journal*, dated May 31, 1821, says, "I can truly declare, that after having had some experience during ten years, with different branches of the Ketton [or Colling] stock, I give the preference to the stock descended from Lady; and I know, also, that they are held in the highest estimation by Mr. CHARLES COLLING, who was the founder of the Improved Short Horns."

Mr. JOHN HUTCHINSON, formerly a distinguished breeder of Short Horns, under date June 14, 1821, in the paper abovementioned, thus strongly expresses his sentiments in regard to this Galloway cross:

"Of the produce of the cow Lady, respecting whose pedigree *A Yorkshire Breeder*, in his zeal for the public, expressed a desire to be informed, it cannot be necessary to say much, the opinion of that public having stamped a value upon them which neither the insinuations of rivalry nor the imputations of less creditable feelings, will be able to depreciate; and I am of the opinion that upon this instance of successful crossing, the advocates for that system may securely make their stand."

But notwithstanding this and much other testimony of a similar nature, it has been asserted in this country, that the cross with the Galloways failed to benefit the Short Horns in any particular, and that it was on the whole decidedly injurious. Though the Galloways, it is said, might gain by the intermixture, the Short Horns, it is thought could not be benefitted. Without any intention of entering into a detailed discussion of this point, we must be permitted to say, that from a careful and thorough examination of the subject, we see no occasion to dissent from the conclusions arrived at by the writers, from whom we have quoted above; and by a fair comparison of the characteristics of the two breeds, we think it will not be regarded as unreasonable, that the Short Horns, as they existed in Mr. Colling's day, should have been improved by an infusion of Galloway blood.

AGRICULTURE AND RURAL ECONOMY OF EUROPE.

[It is with great pleasure that we are enabled to present our readers this month, with the commencement of a new series of Letters from our esteemed and capable fellow-countryman, Prof. NORTON, who, as we announced in our last, has again visited Europe, after spending two years with Prof. JOHNSTON, at Edinburgh, to spend a year more with the most eminent chemists on the continent of Europe, in order the better to prepare himself for the Professorship of Agricultural Chemistry, to which he has been appointed in Yale College. We look with great confidence to the establishment of this professorship, for the most important results to American agriculture, knowing as we do, the high qualifications and sound practical views of Mr. NORTON.—Eds.]

THE GREAT FALKIRK TRYST.

Edinburgh, Scotland, Oct. 15, 1846.

MESSRS. EDITORS—It is not yet a month since I left America, and at that time the trees retained their summer hues, while the air was mild, clear, and delightful. Here I have dropped into the midst of the fogs, rains, chills, and mud, which became so familiar during my former residence. It has rained more or less every day since I have landed.

My stay in Scotland will, at this time be short, and I have but little time, therefore, to devote to observation of the country. One or two excursions I have already made, and hope to make one or two more.

On Monday last I accompanied my friend Mr. Jones, an Irish gentleman, who has been studying for more than a year in Prof. JOHNSTON'S laboratory, to the Falkirk October Tryst. Tryst is a Scottish name for a fair, and the Falkirk Trysts are the largest in the country. There is one in the spring, one at midsummer, and one in the autumn, between the 10th and 20th of October. The October Tryst is generally the largest, and is held during two or three days. The first day is devoted to sheep, and the second to cattle and horses. Falkirk is about half way between Edinburgh and Glasgow, an old and very dirty town, with nothing interesting except its antiquity and the fact that one of Wallace's battles was fought in its neighborhood.

We arrived there by railway from Edinburgh, and walked to the fair ground on the Muir of Stenhouse, a very large, open field, about three miles beyond the town. It has been occupied for this purpose during many years, being well manured by the animals brought for sale. Alternate crops of oats and grass are grown under certain restrictions as to the quantity sown at once, and the time of harvest. That is, the ground must be cleared before a specified day.

The day on which we attended was the sheep day. From 70 to 100,000 sheep are usually brought forward, and from 30 to 50,000 cattle. They come from every part of Scotland, even the most remote islands, so that every variety of breed peculiar to the country is to be seen. On this occasion the number of sheep on the ground was not so large as usual; the demand for them is now great, and the buyers had met many flocks on the roads, and turned them aside from their destination. The number however, was still very far beyond anything that I have ever seen. I could not make even a satisfactory guess on the subject. The scene was to me new and peculiar. The drovers, wrapped in their plaids, stood each over his own flock, and aided by his dogs generally contrived to keep it separate from all

others; most of them spoke Gaelic, and when they got into dispute, which was not unfrequently, gave utterance, with abundance of gesticulation, to series of exonerations and epithets, which sounded emphatic at least. Some stray sheep was continually darting off toward another flock, and the office of guardian was no sine-cure. The colleys or shepherds' dogs, appeared to enjoy the business highly, and to understand what they were about almost as well as their masters. Their intelligence is really astonishing; I saw several who, when all their efforts to turn a fugitive sheep failed, gave up offensive measures and confined themselves to keeping near to it, following it into the midst of a strange flock, and remaining quietly by its side until some of the shepherds should come and catch it. Occasionally a young and imperfectly trained dog, in his enthusiasm transcended his duty, and thwarted the intention of his master; he always seemed, however, to become speedily aware of his error, and slunk away crest-fallen and abashed. The bargains are invariably cemented by a gill or more of whiskey between the seller and purchaser. There are tents erected for the purpose, where they sit and drink quantities of undiluted whiskey that would seem almost incredible in any other than a Highlander.

It is said that during the last thirty years, there has not been so entire a clearance of stock on the second day as on this occasion. Such was the demand for drovers to go to the south, that none could be engaged under \$1.00 or \$1.25 per day. It may interest your readers to know the prices obtained, at what is considered a remarkably good fair here. Black faced wethers brought from \$3.50 to \$7.50; one lot of 300 was sold at the latter price. Black Faced ewes from \$3.25 to \$4.00.

Cheviot wethers brought from \$7.00 to \$8.50; one lot of 1,800 and another of 1,000 at the latter price. Cheviot ewes from \$5.50 to \$6.25. Tups were chiefly black-faced, and brought from \$10.50 to \$25.

Cattle, three year old West Highlanders, Aberdeenshire, Skye, Polled, &c., brought from \$25 to \$50. Some very fine two year olds brought nearly as much as the latter price. These were mostly for feeding. Some fat cattle brought \$106. Cows were from \$38 to \$63. Horses from \$29 to \$190. One fine pair of draught horses brought \$380.

GUANO.—I have formerly written respecting the analyses of guano, made in the laboratory of the Agricultural Chemistry Association here. It is now somewhat difficult to obtain this substance of good quality, and the dealers are bringing forward some extraordinary samples, picked up by ships searching every part of the African and South American coasts. An analysis of a very singular one, lately made here, is now lying before me. Its composition is as follows:

	per cent
Moisture,	15.29
Water of combination,	14.31
Sulphate of Alumina,	26.55
Alumina and Oxide of Iron,	5.12
Gypsum,	0.59
Magnesia,	trace
Alkaline matter,	1.09
Insoluble Siliceous matter,	36.50
	99.45

This substance, it will be perceived, cannot be called a guano at all. There is no ammonia, and there is no phosphate of lime; these two ingredients constitute

the chief value of a guano, and the source of its characteristic qualities; 66 per cent of the above is sand and water. It is not likely to be a refuse, as it would be quite valuable in its present state for the purpose of manufacturing alum, and a person who had intended to palm off a spurious composition upon the public, would scarcely send it for analysis. As yet no clue has been obtained to the manner of its formation. In appearance it is not unlike some of the Peruvian guano, and farmers will do well to be on their guard while such worthless compounds are in the market.

I leave for Holland in a few days, to study for a year in the laboratory of Prof. MULDER, one of the greatest physiologists and chemists of the present day. I shall endeavor from time to time, during my stay there, to communicate such experiments in the laboratory, or accounts of Dutch farming, as may seem likely to interest your readers. Yours, truly, JOHN P. NORTON.

RURAL NOTICES ABROAD.

ROYAL VETERINARY SCHOOL AT ALFORT.—Among the few objects which have interest for an agricultural eye, in Paris, or its vicinity, is the Royal Veterinary School of Alfort, distant some five or six miles from the capital. The name only partially explains its object; which is, a treatment of diseases in all the domestic animals, a study of the causes of such diseases, and means of prevention. The buildings, like all public buildings in France, are large, substantial and elegant. They are arranged nearly in the form of a square, consisting of stables, amphitheatre, lodges, lecture rooms, with conveniences for some three hundred pupils, beside a large number of professors. Students are admitted at a charge of something less than four hundred francs per annum, including board and tuition. A few are admitted gratuitously upon the recommendation of the minister of Agriculture; beside forty named by the Minister of War, for veterinary service in the cavalry.

The stables are arranged with admirable method and neatness; every stall numbered and ticketed with the disease under which the animal is suffering, and the date of its entrance. It of course serves as the regular hospital for the horses of the cavalry, beside which, any person is at liberty to place a sick animal in the establishment, at a certain fixed but low rate per diem. Slaughter of incurable cases is not uncommon, and a dissection of the subject in presence of the school.

At the time of my visit to Alfort, a horse sick with the glanders, was tied in the amphitheatre for slaughter and dissection the following day. Before I left Paris, I learned that one of the students engaged in the dissection, had accidentally cut himself during the operation. This is at all times regarded as dangerous, and particularly so in the case of an animal laboring under this disease. The most prompt medical treatment was resorted to; but the poor fellow suffered intensely for several days, and finally died.

Cows are received, and fed without charge; the establishment availing itself of the profits of the dairy, and reserving the liberty of practising occasional experiments in way of food, and habits of life. Sheep are received and fed upon the same conditions; swine are kept; and there is a minor establishment in connection with the larger for the treatment of sick dogs: we saw one little wiry haired terrier, howling about his double barred cage, in the incipient stages of madness. Nor did it heighten our sympathy for the little whelp, snapping at us through the bars, when the keeper told us that it had been a very quiet dog, before his inoculation with the disease.

A botanic garden forms part of the attachments, and a miniature park for the recreation of the pupils. These things together, make up an institution, which is an

honor to the country and which, for the present, at least, we must content ourselves with admiring, without imitating. For if tried by the test, to which every thing of a public nature must be submitted in our country, it will be found that the veterinary school, like the garden of the Tuilleries, and the fountains of Versailles does not pay. That is to say, receipts in money do not balance the outlay of money. Whether increased inquiry, and stimulus to inquiry, do not more than make up the deficit on the balance sheets, is a way of considering the question, too heretical to be for a moment indulged in.

AGRICULTURAL IMPLEMENTS OF FRANCE.—Just out of the Rue St. Martin, one of the noisiest streets in Paris, is an old religious house, turned into a conservatoire of models of all useful machinery and agricultural implements. The French are not pre-eminent in this way: I fancy our paper-making, cloth-weaving, and board-sawing apparatus, (certainly in point of cheapness and ingenuity of contrivance,) would no way suffer by comparison with the beautifully arranged collection of the Rue St. Martin. Indeed the best models of the collection are of English origin, and English machinery and machinists are found in every city of France. One finds English engineers upon the boats of all their rivers, and is dragged by English locomotives along their railways. Only until recently have they been manufactured at all in France, and though showy in appearance, they are by no means equal to the English, in power or capacity for speed.

However this may be, our implements of Agriculture are nearly twenty years in advance of what may be seen at the Conservatoire. The more common hand instruments are of the most rude and clumsy construction; and plows, multiplied into every imaginable variety of shape and bearing, are totally eclipsed by a neat little American fabric which holds an obscure place in the collection. What would New-York farmers think of seeing a pitch fork with wooden tines, ticketed among the resources of modern agricultural art? and a hay rake, such as a "cute" country boy could make on a rainy day, with his jackknife and knee for lathe, and his thumb and fore finger for compass—displayed in the great Conservatoire of Paris! It is singular that a nation so nice and thorough in the more difficult scientific inquiries, should be so lacking in the more practical means of advancing their national interests. French scientific men have contrived most admirable means for boring the earth to the depth of sixteen hundred feet for water; yet, for boring the earth only to the depth of a few inches, for bread—the means are as paltry as any in the world.

Various ingenious devices found place in the collection, for drawing water, for shelling corn, and for cleaning wheat; but nothing essentially new. The scarifiers and harrows were more complicated, without appearing to be more effective than the American implements for similar purposes. It will afford good illustration of the lack of adaptation in the most common works of French craftsmen, when I tell you that there is not a window fastening in Paris, which would not furnish metal enough properly distributed, for a set of twenty-five in America; nor is there a pair of tongs, even in the palace of the Tuilleries, which would not make one of our Dutch housewives as sour as her pickled cabbage. No nation of Europe is so destitute of

* The reader will recur at once to the famous well of Grenelle in the immediate neighborhood of Paris:—a well which has been sunk by means of chiselling, through rock, and sand, and gravel, to the depth of nearly 1700 feet; and which now sends up water through a tube of nine or ten inches in diameter, 120 feet above the surface of the ground. The history of its construction, requiring years and years of labor, will well reward the reader's attention. It may be found in any modern Encyclopedia, under the head of Artesian wells—so called from Artoise, in France, being the district where they were first sunk.

what we count Yankee cleverness as the French. And among none is it more manifest than with those peasantry who make up the agricultural population of the country.

A French peasant can dance, but he cannot whistle; he can tip his hat with a grace that your Broadway loungee would sigh for, but he cannot put a new tooth into a broken rake.

CAIUS.

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NOTES OF A TRAVELLER IN ENGLAND.

AFTER a lengthened passage of thirty-two days, I reached the shores of England. Land was first seen after passing up the Irish channel about 100 miles, and the enthusiasm manifested by most of the passengers at the sight of land can only be realised by those who have experienced it. We were soon reminded that we were in the old world. The splendid mansions seen at the distance, with the cottages for the tenantry, the occasional view of some castle, the small fields, laid out with much regularity, all confirmed us that we were in a far different land than our own. On Sunday morning, early in May, we approached the coast of North Wales, where was spread out before us in the most lively colors, an interesting portion of Anglesea. In the distance rose, in all their majesty, the lofty mountains, Snowdon rising above all the rest. We entered the Mersey, and cast anchor about 3 o'clock in the P. M., and were soon on shore at Liverpool, the second commercial port in the kingdom. Liverpool has nothing very imposing in its appearance. The style of architecture is more heavy than in the United States, and the buildings being blackened with smoke, the general appearance is far less attractive than an American city.

The spacious and commodious docks in front of the town, are the pride and boast of the citizens. They are most magnificent structures, in which all the shipping are placed to discharge and receive their cargoes.

After a short stay in Liverpool, I took my departure, and travelled through the country, to witness the Agriculture of England. My expectations had been very highly raised, but the reality exceeded my highest anticipations. The neatness and order with which every thing was done, was truly surprising. On my arrival, the country was clothed with a richness of verdure perhaps unequalled in any other country. The farmers were engaged in weeding their crops of winter grain, wheat and rye, and in preparing their ground for the

spring corn, which in some cases was being sown, or, as was most usual, drilled in.

Many girls, women, and elderly men, could be seen in the grain fields, clearing the drills of every weed—the men going before with a scuffle-hoe, and the others taking up the weeds and carrying them off to be burned. Many of these fields I passed which had been finished, and they presented a neatness and freedom from every noxious plant equal to the finest dressed bed in any garden. Nothing was left to interfere with the growth of the plant, and all the nourishment that could be derived from a congenial and richly prepared soil, was thus secured. How different this from America, where the contest often is, which shall succeed, the plant or the weed, and in many cases the latter proves the victor. Where the seed is sown broadcast, as is sometimes the practice, though not general, the same care is taken in removing everything that interferes with the growth of the grain. Here, it struck me, was an example worthy of all imitation. Let the American farmer but practice it, as far as he can consistently, and that an increased return would be the result, no reasonable man I think will doubt.

In the preparation of the soil, I noticed a careful attention to the removal of sods, and everything that would impede the free and healthful growth of the grain. After the ground had been plowed and carefully pulverized by the harrow, persons, mostly females, passed over the land, gathering every particle of grass that appeared, depositing it in heaps, where it was burned—then a heavy roller or crusher passed over the land until it was entirely pulverized, and the seed then sown in drills. It was evident that by giving attention like this to the ground, everything was done to secure the return of a bountiful crop. Why may not the like attention be given to our land, and would not the result be such as to amply remunerate the farmer. Let the experiment be made, and I doubt not it would often be repeated, until it shall become as general as it is in England.

The fields are usually laid out with great regularity, bounded by hedges or raised mounds of earth, covered with sods, with small trees at short distances, presenting a most interesting and delightful sight. Indeed, the country appears thus far, as a highly cultivated garden, and should it, in my progress equal, or, as I understand it will, improve upon this, my first examination, I shall have occasion to admire the perfection which has been attained.

THE GRAIN-MOTH—*TINEA GRANELLA*.

EDITORS CULTIVATOR—No distinct account of this noted insect, has, that I can find, ever been given to your readers. Perceiving that you are inclined to regard the "flying weevil," of which Mr. OWEN has favored us with such exact and valuable details in the July and November numbers of the Cultivator, as the *Tinea granella*, I am induced to send you a sketch of the characters and habits of this species. From this it will be obvious that it is widely different from the insect which Mr. Owen describes.

The European Grain-moth, (*Tinea granella*, as first named by Linnaeus,) is nearly or quite two-fifths of an inch long. It has a tuft or crest of white or yellowish-white hairs on the forehead; short, thread-shaped, (i. e., not tapering,) brown antennae; a very short spiral tongue; its feelers thread-shaped and not directed upwards. The upper wings are whitish, with dark brown spots, and dots, which often run into each other, and thus present a "marbled" appearance; and there

is always near the middle of the outer margin (which is the anterior margin when the wings are spread,) a somewhat square blackish spot, with two dots on the margin back of it; and also a blackish mark from it slanting backwards nearly across the wing. The hind wings are smaller, of a dark lead-color, with long fringes at their hind edges or ends.

The worm or larva of this moth, when full grown, is scarcely less than half an inch in length; it is soft, cylindrical, nearly or quite destitute of any hairs, light yellow, or buff colored, with a brownish-red head, and two brown stripes across the neck. It infests bins of wheat, rye, barley, oats, and probably corn, in granaries, storehouses, and mills.

There appears to be two generations of this insect in a year—the winter generation occupying ten months, and the summer generation only about two. The winged moth appears in July and August, flying by night only, about buildings where grain is stored

The female places but one or two eggs upon a single kernel of grain, till her whole supply, thirty or more, is expended. Some of these are deposited upon ripe or nearly ripe grain in the field, but most of them upon stored grain. According to M. Kollar, the worm when it first hatches, burrows within the kernel; but if this be so, it is certain that it soon becomes too large to remain in such straightened quarters. It attaches another and another kernel to the first, by a fine silken web, until it covers itself in a tube made up of whole and partially eaten kernels, and its own excrements, which are white, roundish little grains, the whole being held together and lined by the web which it spins. Hence, the contents of the bin become "lumpy," from the kernels thus hanging together. The worm grows until its cell becomes too small for it; it then forsakes it, and wanders about over the grain, spinning a thread as it crawls along, so that if numerous, the whole surface of the grain in the bin is coated over with these threads. At length, having found a suitable corner or crevice, it crawls into it, gnaws the wood around it into fine chips, which it connects with silken threads into a kind of cocoon. Without eating anything more, the worm lies dormant within its cocoon through the winter, changing to a pupa or chrysalis in the spring, which sends out the winged moth in May and June. These moths lay their eggs, and the worms of this second or summer generation complete their transformations and evolve the winged moth again in about two months, as already stated. It is therefore from May till September that these worms are found among the grain, and during the rest of the year they lurk in the cracks and crevices of the building.

The remedies against this worm are much the same as those noticed by Mr. Owen, for preventing or destroying the flying weevil. Kiln-drying the infested grain is certainly the most effectual way of ridding it of this and of several other insect depredators. All cracks and fissures about grain bins should be filled with mortar or cement. The naturalist Rosel, found that common salt killed the larva of the Grain-moth, and he therefore recommends mixing fine salt directly with the grain, or washing the bins with a strong brine before filling them, and keeping the grain covered at those times when the eggs are deposited, with cloths moistened with brine.

This insect, or one possessing habits closely analogous to it, and equally injurious to stored grain, certainly exists in this country. A few days since, on examining a small quantity of wheat that had lain undisturbed nearly a year in the mill of Wm. McNeil, at East Greenwich, in addition to three species of perfect insects, and two others in their larva state that are now rioting in it, the webs of the Grain-moth, holding the kernels loosely together in lumps, and thickly interspersed with little white roundish grains, the castings of the worm, were found in abundance. An adjoining bin, the wheat in which had lain about six months, also had many of these webs in it. But the following facts merit a notice, as points in which our insect does not correspond with the accounts given of the European species. 1st. A careful probing of the cracks and crevices around these bins and in other parts of the same loft, failed to bring out any worms belonging to the moth tribe. 2d. There were no threads spun over the surface of the grain. 3d. On carefully opening the webs found among the grain, the dry and brittle skins or cases of the pupæ were invariably found within them. These varied from a pale chestnut to a light yellowish-brown color, the largest ones measuring two-fifths of an inch in length, by three-twentieths in breadth. The shrivelled relicts of the larva are also found at the tip or pointed end of these pupa cases. Hence it is certain that the worm of our American Grain-moth remains in

its web among the grain, instead of crawling away into some crevice to form a new cocoon; and the winged moth issues directly from the grain, instead of from the cracks in the walls.

That the insect which we have now considered is very different from the "flying weevil," is sufficiently apparent; but that this latter is identical with the Augoumois moth of Europe, (*Anacampsis? cerealella*, as the species was first named by Olivier,) I think the descriptions given by Mr. Owen come as near demonstrating, as words well can do. The Augoumois moth has but very few characters by which to distinguish it. About all the specific marks pertaining to it, are the following: It is somewhat under two-fifths of an inch long, has a gloss or lustre like satin, and is throughout of a uniform cinereous color, (brownish white, the well-known color of wood ashes,) the upper wings being light brown, and without any spots or marks. Latreille, however, differs from other describers in pronouncing the insect to be of a brownish cream color. Now Mr. Owen's account shows the flying weevil to be of the same size, and the same lustre; and of its color he says,—the upper wings would be called gray in common language, though they might be termed cinereous or ash-colored by entomologists, and they have a bluish tinge towards their bases, and "towards the tips a yellowish tinge." Here is evidently the "brownish cream-color" of Latreille. The habits of the two insects, moreover, appear to be identical throughout. The worms of both are so minute that they live entirely hid each within a separate kernel of wheat, eating its interior until it becomes a mere shell; and the winged moth comes directly out of the kernel by pushing open the tiny door that the worm had previously fabricated. They correspond even in the curious particular, that each worm builds a web-like partition across the minute cavity in which it lives, on one side of which partition its castings are placed, whilst the worm resides in the clean apartment upon the other side.

It is not fully settled, that I am aware, to which one of the modern genera the Augoumois moth belongs. The two long feelers, curved up over the head like horns, with their last joint naked, and probably longer than the second joint, together with the antennæ and wings, so far as their characters appear from the well executed drawings and descriptions of Mr. Owen, strongly indicate that the insect belongs to Mr. Curtis' genus *Anacampsis*. Nothing but perfect specimens, however, can enable any one to determine so nice a point as this; and I rejoice to perceive, from the Prairie Farmer of April last, that such specimens are at length in the hands of Dr. Harris, whose extensive acquaintance with the almost numberless moths of our country pre-eminently qualifies him for settling every doubtful point respecting this and similar species. Specimens both of the moth and its parasite would be very acceptable donations from Mr. Owen to either of us; but if three or four only of the latter can be procured, let them be forwarded to Dr. H. From his exertions in obtaining authentic materials for completing an account of this species, such specimens would, of right, belong to him. It cannot but be deeply regretted by every agriculturist and friend of science in our land, that the amount of time required for the discharge of his official duties in the University, is at present depriving us of the numerous and valuable contributions to the entomology of our country that we should otherwise be favored with from him.

A. FITCH.

Salem, N. Y., Nov. 17, 1846.

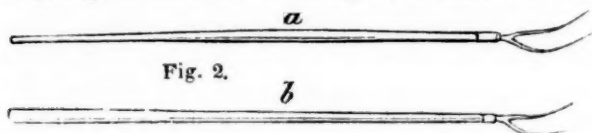
PARSNIPS FOR HOGS.—The Prairie Farmer says they are the best of all roots for this purpose, and states that a hog, 22 months old, and weighing alive 750 lbs., never ate anything but raw parsnips and sour milk.

SCIENCE OF MECHANICS, APPLIED TO AGRICULTURAL PURPOSES.

IN the construction of the more perfect and complex machines used in the arts, the principles of mechanics are closely studied in giving a due proportion of lightness and strength to every part. But in the more simple and common implements for the farmer, mere guess work too often becomes the only guide. It appears to some altogether trifling, to attempt to apply with precision scientific principles to the shaping of a hoe-handle or a plow-beam. Yet a little reflection will show that it is a matter not to be summarily rejected.

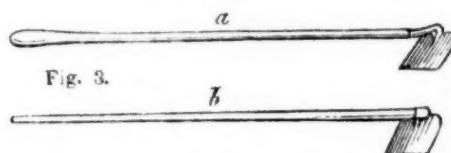
The simplest tool, which is constantly used, should be formed with a view to the best application of strength to effect the intended purpose. The laborer, who makes two thousand strokes with the hand-hoe in an hour, or twenty thousand in a day, should not wield a needless ounce of weight in the implement. If any part be made unnecessarily heavy, even to the amount of half an ounce only, the force repeatedly expended to keep this in constant motion, amounts in the aggregate to no less than twelve hundred and fifty pounds a day, or requires a force equal to the moving of that amount, which ought to be exerted against soil and weeds. Again, a farm-wagon usually weighs nearly half a ton; many of them might well be reduced 50 lbs. in weight, by reducing the size or altering the shape of parts where strength is not needed, without at all lessening the strength of the vehicle. Calculation will show, then, that the amount gained every year, by this reduction, to every farmer who drives his wagon on an average only five miles a day, will be equal to the conveyance of thirty bushels of wheat to a distance of forty miles. Similar estimates might be made in many other cases; and if all the improvements were thus made which might be, the whole gain would be by no means trifling.

We shall endeavor to illustrate this subject by a few examples. In the construction of the simplest tools, as the handles of hoes and axes, rakes, and pitch-forks, a form convenient for grasping by the hand, as well as for strength is needed. The common axe-handle is usually well formed for both these purposes—the flat shape, for strength, edgewise, and with the greatest width at the entrance of the socket, where most strength is required. Fork handles are often well made, but not unfrequently are quite defective in a combination of strength and lightness. The greatest strength being needed at the middle, where fracture usually takes place, they should here be of larger size, at the same time that full size must be allowed for a perfect fitting of the prongs to the handle. In fig. 2, *a* shows a well-



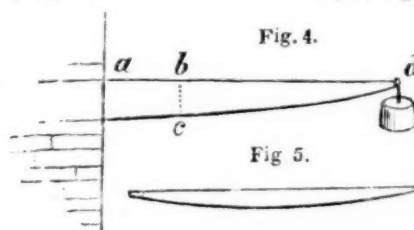
formed handle, and *b*, one badly formed. Hoe-handles, not needing much strength, lightness and convenience for the grasp of the hand, should be mainly sought. For the latter purpose, there should be an enlargement at the upper end, to prevent the hand slipping; the rest should be nearly of equal size throughout. For lightness, the weight should be lessened as much as possible towards the blade, nearly all the motion being in this direction, the upper end being in a manner the centre of motion; hence it is highly important that the lower part be made as slender as possible, that the constant movement be not impeded by a needless ounce.

The chief reason that the old hoes, with a large ring or socket attached to the blade, were so much less effective than the best modern hoes, was the large and heavy form of the lower part of the handle. Fig. 3,



represents two hoes, *a* being a well-formed handle, and *b* a clumsy one. Rake handles are usually made so as to break in the middle; hence, the size should be there increased, and diminished at the ends. The same remark applies to the heads of rakes. Horse-rakes should be made as light as possible; the head or main bar is usually of the same size throughout, but it may be much diminished in weight by an observance of the principles of mechanics. Plow-beams are often unnecessarily cumbersome, the greatest strength being needed at the junction of the mould-board, the least near the forward end, or farthest from the centre of motion. It very rarely happens that the beam ever breaks just back of the elevis, hence this part may be often much lightened.

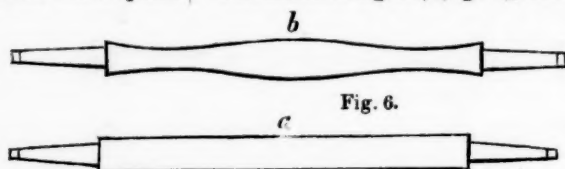
The limits and character of this article will not admit of a full or accurate examination of the mathematical principles, applying to the construction of implements and machines; but a few of the principles of almost constant application may be superficially explained by figures. If a bar of wood, *a*, fig. 4, is set,



fixed in a wall, to support a weight at its extremity, it will possess as much strength for this purpose when it has the form exhibited in the figure, as if of an equal size throughout; that is, a considerable portion of a bar of equal size may be cut away without lessening its strength.* The same reasoning obviously applies to a bar supported at the middle, with a weight at each end. It also follows as a matter of course, that the same shape is to be given to each part as to the single one in fig. 4; and would therefore be of the form represented in fig. 5. The shape is not altered when it is supported at the ends, with the weight at the middle. Hence this form, or one similar, becomes the proper one for many purposes in practice, as for instance, the rounds and bars or poles of ladders, the bars of whippletrees, fork handles, &c.; and the half length as in fig. 4, for

* If accuracy is required, the following rule is to be observed. The bar is to be diminished, in passing outwards from the wall, so that the breadth multiplied by the square of the depth shall always bear the same proportion to the diminished distance from the outer end:—That is, if *b c* be the depth at any place, then *b d* must be as the square of *b c*. This is on the supposition that the two vertical sides are parallel; if, however, the stick tapers on all sides alike, then *b d* must be as the cube of *b c*. In the former case, the lower edge of the bar will have a cubic parabola as the curve of its taper, the upper side being straight; and in the latter, the curve would be a common parabola. If the weights press on all parts of the bar alike, the form will be somewhat different.

rake teeth, fence posts,* the tongues of wagons and carts, wheelbarrow handles, spade handles, &c. This form must however be modified to suit circumstances, as for instance, whippetrees must be large enough at the ends to secure the iron hooks, and wagon tongues for the ironing at the end. The axletrees of wagons and carts, must not only be made strong in the middle, but also at the entrance of the hub, the wheels, when thrown sideways, operating as levers to snap them off at the latter point. The annexed figure, (fig. 6,) shows



two forms of a cart axle, *a*, unnecessarily heavy, as too often made, and *b*, the improvement. Ladders are often required to be very light, but their weight, as usually made, may be considerably diminished by lessening the ends of the two poles, and also tapering the rounds to each extremity, by which smaller holes are needed for their reception, and the poles consequently may be smaller. Where various forces are to be resisted, attention must be given to all; for example, in the spokes of wagon wheels, much strength is required at the hub for stiffening the wheel laterally; they must be strong at the middle to resist the contracting pressure of the tire; and of sufficient size at the circumference, where they are apt to be weakened by decay, from constant exposure to mud and water.

The best form is nearly a uniform taper towards the

outside, with a sudden enlargement at the outer extremity.

A rule of very general application in constructing machines, &c., is, in all rectangular bars or beams, the strength increases as the breadth, and as the square of the depth. Thus, a timber 4 inches wide, and 6 inches deep or thick, is twice as strong as a timber 2 inches wide and 6 deep; and one 2 inches wide and four deep, is four times stronger than one 2 wide and 2 deep; or if 6 inches deep, it is 9 times stronger. The same rule will show that a board 12 inches wide and 1 inch thick, will support 12 times as great a weight when edgewise as when lying flat. Hence the increase of strength given to whippetrees, fence-posts, joists, rafters, string-pieces of farm bridges, &c., by making them flat, or narrow and deep, may be precisely known. Again, the strength of a round stick or pole, (cylinder,) increases as the cube of the diameter increases; hence a stick 3 inches in diameter is 27 times stronger than a stick of equal length one inch in diameter. Hence, when an increase of strength is needed in round bars of wood, as for the handles of tools, or spokes of a ladder, this rule may be easily and accurately applied.

These remarks might be extended to almost any length, did our limits permit; our object, however, is merely to direct attention to the importance of the study. All who construct implements should understand the subject thoroughly; and farmers, who must know how to choose good from bad ones, should be able, as far as practicable, to select those which are well made, and equally strong in all their parts, and avoid those which are defective or unnecessarily cumbersome, without the long and costly process of purchase and trial. T.

MANAGEMENT OF BEES.

EDITORS OF THE CULTIVATOR—The destruction which took place among bees, last spring, has caused much inquiry respecting the cause. Believing that I can throw some light on the subject, I proceed, without further comment, to make a few remarks.

I commenced keeping bees in March, 1813, with only one swarm, and by the increase of this, in a few years, I was in possession of twenty hives—wintering nearly that number a great part of the time till the last season. Soon after I commenced, I occasionally lost hives of bees, and on examination, I found that the young had died in their cells, where they had turned black, and produced an offensive smell. Why the young should thus die in the cells, was a matter to which I directed much inquiry. I had read several authors on bees, some of whom described the dying of the young bees in cells as a *disease*, but pointed out no satisfactory course or remedy. In the month of June, about twenty years ago, I had five young swarms come out about ten o'clock in the forenoon. The weather being very hot, they all came out in the course of fifteen minutes, and were hived. In the after part of the day, there was a thunder-shower, which brought the wind north-west, and the weather turned cold, giving frost the next morning, on low land. The consequence was, the five old swarms from which the above young ones came, failed to increase. I attempted to winter them, but the following spring, they were all, except one, dead. I then broke out the combs, and found dead

young in the cells. This led me to the cause of the death of the young bees.

Two years after this, a similar case occurred. After the bees swarmed, it came off cold as before. At night, I covered the old hives that sent forth young, with bed-quilts and blankets, and on removing them the next morning, I discovered the bees were lively, humming at the lower entrance of the hive, and it was evident from the bursting of the caps of the cells at the entrance of the hive that the process of hatching had gone on as well as in a warm night. In eight days those old hives swarmed again, and some a third time, still leaving the old hives well stocked with bees. From that time till now, (fifteen or twenty years,) I have not lost a single swarm of bees by the young dying in the cells.

From this discovery and remedy, I have come to the conclusion that there is no disease in the young bees, while in the cell, that would cause their death or that of the parent stock. We all know among the feathered tribe, it is necessary to keep up a certain degree of heat by brooding, or otherwise, in order to produce young from the egg. Should a hen sit on her eggs one week, and then leave them until they were perfectly cold, no future sitting would hatch them. Now, if the case in regard to the eggs may be properly called a *disease*, then we may say that the young bees in the cells die from disease. But it is well known that bees will recede to the upper part of the hive, when the weather is cold, and whenever this takes place, while the brood comb is filled with young, they invariably die.

This brings me now to speak of the past season, in which so many valuable swarms of bees have died. It

* Strictly speaking, the pressure being on all parts of a fence post alike, it should be in the form of a wedge, with straight sides. Hence, a fence post of equal width throughout, contains twice as much timber as is needed for strength merely.

will be recollected that the beginning of April last, was very warm and pleasant, and from the putting forth of early blossoms, such as those of the willow, alder, red, or soft maple, the bees commenced their labor with great activity, bringing in pollen and honey in such quantities, that their cells and the brood comb, were soon filled. About the 20th, or 25th of April, it was severely cold, lasting several days. This drove the bees up from the brood comb, and the young died in the cells. In my experience of thirty-three years in keeping bees, the last spring was the first time that the young died in the cells before swarming time. Out of eleven stocks which I had last spring, I lost five. My observation in regard to bees teaches that a full colony will secure themselves from cold, or from the moth, which is a good reason for putting back second and third swarms. In wintering bees, I have tried burying in a sand-hill; sometimes have put them in the cellar, the garret of the house, &c. I have had them do well in all these places, and have experienced great losses in all of them. In reflecting upon the subject, I have been led to the construction of the proper house for the wintering and summering of bees. I built one about two years ago, 10 by 24 feet, which will accommodate twenty-four

swarms in the summer season, and double that number can be wintered in it. I had but two swarms in this building last April; but by closing my bee-house a few days in the cold spell of weather the last of the month, those two have done as well as bees do in most seasons, swarming and making honey; whereas those that were out, died, as before stated, and many people in this vicinity lost all their bees. In the October number of the Cultivator for last volume, page 305, mention was made of my bee-house, stating that a further explanation was expected. I have not now time to give this explanation, and perhaps it is less necessary, as I am compiling a manual on the management of bees, in which I shall show the advantages of my house by diagrams exhibiting all its parts. Hives of any construction can be kept in it. There are many patent bee-hives; that of Colton's, of which an engraving was given in the December number of the Cultivator, I think well adapted to the economy of the bee, and as it is double on every side, or nearly so, is well calculated to shield the bees from the cold as well as heat. I shall try it the coming season, when I shall be better prepared to speak of its utility. NATHAN HOWARD

Stephentown, N. Y. Jan. 1, 1847.

WEEDS INJURIOUS TO THE WHEAT CROP.

MESSRS. EDITORS—I send you the following, for publication in "The Cultivator," about the *Lithospermum arvense*, which, in different sections of the United States, has the names of Pigeon Weed, Red Root, Stone Weed, Corn Gromwell, &c.

DESCRIPTION.—Stem, 12 to 18 inches high, much branched, and whole plant hispid, with short oppressed hairs. Leaves, lance-linear, acute, with a midrib. Lower leaves often obtuse. Flowers, solitary, subsessile and axillary. Corolla, white, or yellowish white. Calyx, segments acute, hispid ciliate. Nuts, rugose, ovoid, with the acuminate beak rather oblique. Root, annual.

In the artificial or Linnean System it belongs to the Class Pentandria, order Monogynia, and according to the Natural System, it is placed with the Boraginæ, or Borage tribe of plants. It is a great pest to the wheat crop, by outgrowing and smothering the young wheat in the spring; generally arriving at maturity in Western New York, in the month of June, two or three weeks before the wheat harvest. Its seeds yield a small quantity of oil, being worth at the oil mills from 31 to 37 cents per bushel. But this is a poor compensation for the damage done to the farmer.

It is a native of Europe, where it is frequent in cultivated fields and pastures; yet it does not seem to prevail to such an extent as to do much damage to the wheat crop, since little notice appears to be taken of it by their agricultural writers. Loudon, an English author, in his *Encyclopædia of Plants*, merely states that the bark abounds with a deep red dye, which stains paper, linen, &c., and which is easily communicated to oily substances, resembling in this respect the Alkanet root—hence it is often called in England the bastard Alkanet. The country girls in the north of Sweden, stain their faces with this root on days of festivity.

Besides the arvense, there are nine other species enumerated as growing in Great Britain, and in Decandolle's *Prodromus*, we find sixty-five species described, most of which are natives of the old world. The "Red Root," is widely diffused, growing in nearly every part of Europe; it is a native of Northern Africa,

according to Desfontanes, and was found in Southern Africa by Burch. It grows near the river Euphrates, in Asia, where it was collected by Chesney, and also in Asia Minor, according to Aucher. It has probably been greatly spread by the migration of birds, since many species of birds void their food when they find something that suits them better. Thus it is supposed to have been often spread in this country, and hence one of its names, "Pigeon Weed."

It has been introduced into America, and is already spread through a large portion of the wheat growing states. It grows in the vicinity of Charleston, South Carolina, according to Elliott, and from our Botanical Catalogues, we find that it abounds in Kentucky, Ohio, and the Western States, in Maryland and Virginia, and in Vermont and Massachusetts, and every farmer knows that it is found, more or less, throughout the Middle States. There are five or six additional species growing in the United States, a new species having lately been discovered by Dr. Chapman in Florida. In Yates Co., there are two species, the arvense and latifolium. To return to the arvense—when it has once obtained possession of a field, it is eradicated with difficulty, as its seeds will lie in the ground many years without germinating, especially when they are covered to a depth which prevents them from receiving a due proportion of air, warmth and moisture.

It is only by studying its nature that we can arrive at any sure method of exterminating it. Seeds of every description rarely fail to germinate immediately after becoming ripe, if they are covered at a slight depth with moist, warm soil, before they get dry and hard. The Pigeon Weed, or Red Root, ripens some weeks before wheat, and if the season be dry, the seeds, by being deprived of their natural moisture, will not germinate unless they are placed under very favorable circumstances, viz. be slightly covered with a moist, warm soil. Its seeds are very hard, hence its botanical name, which is derived from two Greek words, signifying stone and seed, so that they are under all circumstances most difficult of germination. Hence, after the wheat harvest, they generally lie upon the surface of the ground,

without germinating, until by subsequent cultivation of the soil, they are nursed into life. It may be, that if they are buried to a great depth, by the first plowing after wheat, and the subsequent plowings are not quite so deep, that they will remain unchanged for years, and the farmer may suppose that his soil is free of the pest, until deep plowing brings them to or near the surface, where the conditions are favorable to their germination. Prof. Lindley, in the third edition of his *Introduction to Botany*, mentions that he had three plants of Raspberries, which had been raised from seeds found in the stomach of a man whose skeleton was found thirty feet below the surface of the earth, near Dorchester, in England. He had been buried with some coins of the Emperor Hadrian, and it is, therefore, probable that the seeds were 1600 or 1700 years old. A new kind of Pea has lately been grown in England from seeds found with a mummy, in Egypt, where they had been entombed perhaps thousands of years. There is no doubt but that the seeds of *Lithospermum arvense* will, under favorable circumstances, retain their vitality without germination during many years. Seeds, to germinate easily, must be near the surface. This is an established law of nature adapted to the circumstances in which most seeds are placed that grow upon the surface of the globe. They grow, ripen, and fall to the ground to be washed into the soil by rains, or commence ger-

minating at the surface and send their roots into the ground. Therefore, to eradicate Pigeon Weed, we would recommend, if the ground be wet, or sufficiently moist, to have it thoroughly gone over with a sharp toothed harrow, early in the fall, succeeding the wheat harvest. That is generally a busy time with farmers, and the harrowing could be done much easier than a shallow plowing. Besides, if the business is well done, the seeds will be covered to the depth which nature requires, and hence they will germinate, and can easily be destroyed by plowing the ground for a crop in the spring. If plowing be done in the fall to cause the seeds to germinate, it should be as shallow as possible, not to exceed two or three inches in depth, and then the ground should be immediately harrowed. This will be very effectual, and by plowing the ground in the spring, the weed will be killed. Another excellent method is to plant the wheat stubble the succeeding spring with corn, well manured, and then sow with barley the next spring. We have remarked that the *Lithospermum*, if there be any seed in the ground, generally germinates in the fall on corn stubble. By this course, if the manure contain any seeds, they will also be destroyed by the succeeding spring's plowing for barley. If our farmers will practice the above methods, and be careful to have clean seed wheat, they will soon rid themselves of this great pest to the wheat crop.

S. B. BUCKLEY.

WINTER CALCULATIONS FOR FARMERS.

FUEL.—Every farmer knows that a green stick of wood is much heavier than a seasoned one. If a stick of beech or maple, or of any other wood commonly used as fuel, be weighed when first cut, and again when thoroughly seasoned, it will be found to have lost about one third of its weight, which is, of course, the water in the wood, evaporated by drying. How much water is there, then, in a single cord of wood? There are 128 cubic feet; deducting two-fifths for the interstices between the sticks, leaves 77 solid feet of wood. One-third, or 26 cubic feet of this is water, which is equal to more than six barrels, the quantity in every cord of green wood. The teamster, then, who draws in one winter, a hundred cords of wood to market, loads, draws, and unloads, more than 600 barrels of water, which he need not have done had the wood been cut a year sooner and properly seasoned. How much would he charge for drawing those 600 barrels, in water, separately?

Again—In burning green wood, the water, in the wood, being cold, is heated from freezing to boiling. In the consumption of every cord of wood, therefore, six barrels of water are thus made to boil, the heat of the wood passing into the water, instead of being liberated and becoming available, as would be the case if the wood was dry, and no water to heat. Many of our villages, containing two or three thousand inhabitants, consume each year five thousand cords of wood, one-third of which, at least, or sixteen hundred, is green. Hence, the people of such village are at the needless expense of boiling about ten thousand barrels of cold water yearly. How many village taxes would the expense of doing this, pay?

Again—It is ascertained that the heat required to evaporate a barrel of water, after it is heated to boiling, is more than five times that required for the heating. That is,—if a vessel of cold water be placed over a fire, and a half hour be required to heat it from the freezing to the boiling point,—then it will be found to require

five more half hours to evaporate all the water. Consequently, in burning a cord of green wood, the heat required to drive off the six barrels of water in steam, which must be done while the wood is burning, is five times as great as the mere boiling of the water, or equal to heating thirty barrels to boiling. Hence, the farmer who burns twenty cords of green wood in a winter, as many do, also performs the needless task of evaporating sixty barrels of water, which is equal to heating to the boiling point no less than six hundred barrels.

Is there any mistake or error in these calculations? Then let it be pointed out. The weight of water in a green stick, may be easily known by first weighing it, then seasoning it by the stove a few weeks, and weighing again. In this way the quantity of water in a cord may be determined without mistake. The heat required for evaporating can be ascertained by experiment. All the other calculations follow as a matter of course, and contain no material error. Now is the time for every one to have his wood cut a year in advance, and, if possible, two years, so as to season one year under shelter.

Again—It has been found that in a common *fire-place*, the loss of heat which escapes through the chimney, is nine-tenths of the amount caused by the consumption of the wood; that is, nine-tenths are lost. This has been determined by comparing the quantity of wood needed to heat the same room equally, where a *fire-place*, and a stove with forty feet pipe, were each used. Hence, the village which burns a thousand cords of wood in *fire-places*, expends nine-tenths of this amount, or nine hundred cords, in heating the air above the chimney-tops. Through the chimney of a large *fire-place*, there is a current of hot air, a foot square, and moving four feet a second. That is, four cubic feet of hot air are sent out into the wide atmosphere every second, which is equal to eighty-six thousand cubic feet in twenty-four hours, the amount which every farmer,

who uses an open fire-place, contributes to the winds.

FEEDING DOMESTIC ANIMALS.—If one cow daily treads three pounds of hay under foot in the mud, she will waste about a hundred pounds per month; or a herd of twenty cows would waste a ton per month. At this rate, how many times, every ten years, would the quantity wasted pay the expense of making feeding boxes and racks?

WATERING CATTLE.—Many farmers suffer a loss by not providing good and convenient water for their cattle. An animal that is compelled to go half a mile over a slippery road, and chased perhaps by dogs, cannot gain in flesh by the operation. If a cow has to travel twice a day half a mile to water, and return, she travels two miles a day;—or ten cows perform twenty miles of travelling per day, and two thousand miles each winter.

GATES.—Every field on the farm should be entered by a good self-shutting and self-fastening gate. Farmers, who are too busy in summer to make them, or

get them made, should see to it now. How long does it require to take down and put up a set of bars? At least two minutes; which if repeated three times a day for a year, amounts to thirty hours, or three days of working time—which would yearly pay for a good gate. Or, examine it in another point of view,—three times a day, is eighteen hundred times a year; now, is there any man between Halifax and California, who would take down and replace a set of bars eighteen hundred times in succession, in payment for a farm gate? Hardly—yet this is the price yearly paid by those who use bars that are constantly passed, and the gate is not obtained by it. Again—how much better is a well-hung gate, than one half-hung?—or one with a good self-fastening latch, than one with a pin crowded into an auger-hole? Try it by dragging a badly hung gate over the ground, eighteen hundred times in constant succession, securing it each time with a pin, and see if you do not think this labor would pay for good hinges and a latch. T.

SKETCHES OF MASSACHUSETTS FARMING.

DURING the latter part of November and the beginning of December, we made a hasty excursion through some portions of Massachusetts. From the season of the year, we could see no growing crops, nor make particular examinations of soils, yet we had the opportunity of seeing and conversing with the farmers, of viewing their stock, buildings, fences, and stored products, and of learning something of their general management. We give, under their appropriate heads, some remarks on the different subjects which came under our notice.

SWINE.—Massachusetts has been long in possession of excellent swine-stock. The celebrated Bedford or Woburn breed, was first introduced here by the late Col. TIMOTHY PICKERING, many years since, and from its extensive dissemination, perhaps, effected a more general improvement than any other variety has done. Most of the other esteemed English breeds have been introduced at various times, and in the hands of different individuals, have received a pretty thorough trial. Though but few of these breeds can now be found in their purity, yet such has been the improvement resulting from their introduction, that many animals can be found which are well adapted to the circumstances in which they are placed, and the purposes for which they are designed.

In our November number, (last volume,) in speaking of the different varieties of swine, we mentioned the Mackay breed, and expressed some doubt, whether many of the genuine stock could now be found. We are gratified, however, in being able to state, that during our recent visit to the Bay State, we ascertained, for a certainty, that there are still "a few more left of the same sort." Col. JAKES, of the Ten Hills' farm, near Boston, has three boars, and one sow of the true Mackay breed. In 1831, Col. J. purchased of Capt. MACKAY, his entire breeding stock of swine, consisting of several boars and sows. Many obtained the stock from Col. J., and, among others, J. P. CUSHING, Esq., and the Hon. DANIEL WEBSTER. From these gentlemen it became still more widely scattered. Mr. W's. famous Mackay boar, now as well known in Massachusetts as the horse Black Hawk is in Vermont, or the Gifford Morgan in New Hampshire, was bred by Col. J. and by him sold to Mr. W. August 20th, 1834. He is, therefore, now nearly thirteen years old, though still as

vigorous as ever. The four animals mentioned as now in Col. JAKES' possession, are of his get. His progeny, though but few of them are from sows of his blood, are very numerous—he having at various times traversed portions of the country, from Hadley, on Connecticut river, to Marshfield, on the sea-coast.

Col. JAKES' swine are from fifteen to sixteen months old. He offers to sell one of the boars at \$50, and we really believe that his value to a pork-making neighborhood would be *ten times* that sum. There is no question that this Mackay stock possesses a remarkable tendency to fatten. We know this from our former experience with the breed, and our conclusions from this source are fully supported by observations during our late tour.

On the 5th of December, we saw four pigs of one litter, owned by Mr. JOHN MOORE, of Warren, Mass., which he stated were farrowed on the last day of February, 1846. They were, therefore, when we saw them, nine months and five days old. It was estimated by butchers in the neighborhood, that their average dressed weight, if slaughtered at that time, would have been *four hundred pounds*! We have no hesitation in giving it as our opinion, that one of them would have overrun this weight at that time. We thought them the most wonderful pigs we had ever seen, both for weight, according to age, and weight, in proportion to bone. One of them was utterly unable to stand, or get upon his legs at all, and Mr. MOORE was intending to kill him that day. Another, the largest of the four, could only with the greatest difficulty support himself on his legs, for a few minutes at a time. Mr. M. stated that these pigs were half Mackay, to which blood he attributed their remarkable tendency to fatten, they being, on the other side, of the common stock of the neighborhood. We expect to be furnished with the precise dressed weight of these pigs. It may be as well, however, to state, here, the manner in which they were fed; and, in so doing, we shall be under the necessity of adding a *cow story* to the story of the pigs.

Mr. MOORE kept, last season, four cows. The product of these four cows for the season, (nine months,) was six hundred pounds of butter, which sold at twenty cents per pound, and thirteen hundred quarts of milk, which sold at four cents per quart. The four pigs above mentioned had the *skimmed milk*, from which

the six hundred pounds of butter was made, and were, besides, fed eight dollars worth of grain (made into meal) each. He had engaged two of the pigs to go to Boston, at eight cents per pound, dead weight. It is very easy to see that Mr. M. had realized a pretty good income from his cows; the milk and butter, leaving the pork out of the account, gives to each cow forty-three dollars.

In the article in our November number, to which we have before alluded, we spoke also of the Suffolk breed of swine, some of which have been imported, by WILLIAM STICKNEY, Esq., of Boston. While in that vicinity, we went out with Mr. S. to his residence in Roxbury, where he keeps some of his swine. The specimens of this breed, which we had before seen, were mostly too young to justify a positive idea of what they might be when they had reached maturity. But we had now an opportunity of seeing, besides several pigs and young shoats, two barrows which were about sixteen months old, and were soon to be slaughtered; and though we had before formed a highly favorable opinion of the breed, we must acknowledge that their aptitude and capacity for acquiring fat, is even greater than we had supposed. The two barrows alluded to, are certainly extraordinary animals—possessing uncommon bulk and weight of carcass, with very little bone and offal. We shall probably receive an account of their dressed weights. We saw several persons who have had pigs of this breed from Mr. STICKNEY, and they invariably spoke of them in the highest terms as a *profitable* stock. They stated, that merely for fattening, it was better, on the score of economy, to pay six dollars a piece for the Suffolks, at six weeks old, than to buy the country stock at Brighton market, at the usual rates. In fact, after what we have seen and learned of them, we should not be disposed to doubt the statement of Mr. RHAM, author of the Dictionary of Agriculture, that “the Suffolk breed of pigs is, perhaps, on the whole, the most profitable of any in England.”

At the State Lunatic Hospital, Worcester, and several farms in that neighborhood, we saw very good hogs which exhibited evident traces of Bedford and Mackay blood. At Mr. HENRY STRONG'S, Northampton, we saw five capital hogs, which would then have averaged five hundred pounds each, dressed. Mr. HORATIO SARGENT, of Springfield, has some very good hogs, a cross from Mr. WEBSTER'S Mackay boar with Berkshire sows.

CATTLE.—The cattle of Massachusetts were, no doubt, derived in the first place chiefly from England, though it is not unlikely that some were procured from Wales, and some from Ireland. As many of the first settlers emigrated from Devonshire, it is, with good reason, supposed that they brought with them the cattle of that district. In fact, it is thought by many, that the characteristics of the Devon breed *largely* predominate in most of the common, or what are called “native” cattle of the state. We are hardly prepared to assent to this position—we admit that the stock possesses traits in common with the Devons; but among the best of them, we think there are equally as strong indications of the Sussex blood. The proximity of the English county of Sussex to the coast, and its convenient access to vessels fitting out for America, renders it quite probable that this was one of the districts to which the New England colonists resorted for procuring their first domestic animals. We are not, however, aware that any authentic record exists of the early importations, and these remarks are only offered hypothetically.

But, within the last sixty years, importations have been made, at various times, of the Bakewell, or Dishley Long Horns, the Holstein, and Dutch Short Horns, various families and subvarieties of the English Short

Horns, the Devons, the Herefords, the Ayrshire, and the Alderneys, besides one bull, at least, from Russia. Most of these have been introduced within the recollection of the writer, or the last thirty years, and the dates of many of the importations might be given. The blood of these different varieties has, of course, been mingled in a greater or less degree with the general stock of the state, and the several strains are frequently distinctly traceable in what is called the “native” breed. Yet there are a few neighborhoods, where the cattle have been for some time kept in a measure free from intermixture, and there they have considerably assimilated to an uniform character; though this character is not that of any English or foreign variety that we have ever seen described.

The oxen of Massachusetts, particularly those of Worcester, and some other counties, have long been celebrated for their fine appearance and excellence in the yoke; indeed, their performances are often a matter of surprise to persons unacquainted with the natural capabilities of the ox, and who have seldom witnessed the development of his powers under the exercise of proper skill in breeding, rearing, and management. The attention of a stranger is often attracted by the noble teams of oxen which are so frequently met with in the city of Boston and vicinity; and he seldom fails to notice their spirited and lively air, and the brisk and springy walk with which they move along their heavy loads. Most of these fine oxen are *educated*, if not bred in the county of Worcester. The towns of Sutton and Charlton, are especially distinguished for this description of stock. There are men here, with whom the breaking of steers, and disciplining and fattening them for sale, is made a profession. As great pains are taken in selecting and matching them, as to color, shape, weight, temper, &c., as skilful jockies bestow on their horses. Nor is scarcely less pains taken in their grooming. Their skins are kept clean, and their coats bright and smooth by the daily use of the curry-comb and brush; their long, tapering tails are neatly shaved or trimmed, leaving only a handsome tuft at the end; and their slender, gracefully-turned horns, ornamented at the tips with bright brass balls, are scraped and polished till they are almost as clear as if they had been wrought by the comb-maker. Red is the color mostly preferred, though some are brindled, and a few have a little mixture of white. Their training is commenced at a very early age, being frequently put under the yoke when not more than six months old. The object, however, is not to *work* them at this age; but only, by accustoming them to the necessary manœuvres, to gradually fit them for labor when they shall have acquired sufficient weight and strength. They are usually sold for the purpose of being put steadily to work at the age of four to five years, and the usual prices they bring are from \$100 to \$150 per pair, those of very extra quality sometimes fetching much higher prices.

Those who have attended the plowing-matches and other trials of working oxen in Massachusetts, have seen something of what these animals can do. In a fair competition at the plow, on soils of every description, they have seen them rivalling, and even surpassing the best horses, both for speed and quality of work. A single yoke is sufficient for turning a good furrow, in ordinary soil, and though the plowman is his own driver, such is their discipline, and the exactness of their movements, that they require but very little attention.

The live weight of these oxen, from four to seven years old, when in ordinary working condition, may be rated at from thirty to thirty-six hundred pounds per pair. A few of them reach forty hundred. The medium sized ones are preferred as being in general more active and more hardy. When fattened, they weigh

alive, from forty to forty-five hundred, and give proportionate dressed weights. Their beef is generally of good quality, and is well liked in Boston market.

It may be proper to say a word in regard to the manner of feeding working oxen. For common farm labor, it is seldom that anything more than hay or grass is required; though it should be remembered that the hay is of the best quality. When they are kept constantly

at hard work, some more nutritious substance is given. Meal of Indian corn is most frequently resorted to, and it is thought that the best mode of using it is to mix it with chopped or cut hay. "Cob-meal," as it is called, or meal from the corn and cob ground together, is much approved. The quantity of meal given to each ox, varies according to the severity of the labor, from two to six quarts per day. [*To be continued.*]

RENOVATION OF THE POTATO—THE POTATO ROT.

MESSRS. EDITORS—Among the premiums given by the State Agricultural Society the past year, were two for the best seedling potatoes, and the greatest variety of seedlings. Mr. N. S. SMITH, of this city, received them both. As he is a near neighbor of mine, and I can speak from personal observation, I have his permission to give some account of his mode of culture and success.

He began four years since to plant seed from potato balls, and has every year planted not only the tubers from the improved seed, but the seed from the newly produced tubers. In the potatoes springing from the improved seed of each successive year, there has been a manifest improvement in size, quality, and quantity; so that this year I counted thirty-six sizeable table potatoes, that came from one hill, or rather from one seed, and all attached to one stock or vine. Many of these potatoes, growing from seed planted last spring, weighed from five to seven ounces each. The seedlings have the most fair and healthy appearance, with no signs of the prevailing disease, though they consist of many varieties. On two outer sides of his garden, all of which is of the same soil, exposure, &c., Mr. S. planted, the past year, some eight rows of common potatoes purchased in the market, consisting of pink-eyes, neshanocks, or mercers, and flesh colored; next to these, on two sides, he planted some twenty rows of different varieties of his improved kinds; and next to these he planted seeds taken from the balls last spring. These all had the same soil, culture, and attention. I should say here, that he first started the seeds in a hot bed, and afterwards set them out in a furrow about two feet apart,—one plant making a hill.

But mark the result when dug. Of the varieties first above named, many were badly diseased; the neshanocks most, the pink-eyes next, and the flesh-colored least. The improved varieties, growing by the side of these, showed scarcely any thing of the disease, and the seedlings none at all. At least, I have been unable to discover any up to this time, though I witnessed a considerable portion of the digging, and have examined very carefully among some twenty or thirty bushels.

A friend of mine in Niagara county, planted a large quantity of seed a few years since, and procured new potatoes sufficient to stock his farm and several others, but they were very small the first year, and the product, though vastly superior to the common varieties, did not wholly resist the rot. Mr. Smith's, on the contrary, by being improved from year to year, seem to have acquired such a hardy and perfectly healthy character in their renovated constitution, as to resist perfectly the disease, and to yield abundantly of large sized potatoes. Indeed, I often thought, as I witnessed the digging, that the hills of seedlings yielded more, on the average, than the common potatoes that had been planted with four pieces in a hill. Mr. S. intends to follow up his experiments with the potato, and is confident, that with the assistance of a boy, he can plant as

much ground with potato plants in a day, as two men can with potatoes in the ordinary way. In this way he is confident, that however the rest of the world may fare, he shall have a supply of the very best potatoes, free from disease.

In view of the above and other considerations, I am induced to offer a few remarks:

1. *The potato has greatly degenerated*—it exhibits many symptoms of exhausted vitality. This is evident, not only *from the disease* so universally prevalent, but from the *small quantity produced in a hill*, for many years past. The remark has probably been made by farmers thousands of times within a few years, that potatoes do not yield half so much as they did twenty or thirty years ago, and the product is decreasing every year. Another evidence of their degeneracy is the fact, that they are beginning to be *very deficient in balls or seed*—many large patches and fields being found wholly without them. In Mr. Smith's garden not a ball could be found during the whole summer on any hill planted with common potatoes, while the vines of his renovated potatoes, and even the seedlings of last spring, were covered with balls. Another evidence still, is the *watery and insipid character* of those that escape the rot, compared with the potatoes that were grown twenty-five to thirty years ago. Those gifted with a vivid recollection, will not fail to perceive the contrast.

2. It is believed that an *effectual remedy for the potato disease* is within the reach and application of every man. Mr. Smith's experiments show what it is, and how it is to be applied. Not that the seedling of one year or two will, in all cases, be sufficient to give the potato a perfectly healthy and hardy constitution; for like some diseases in the human constitution, that run in the blood to the third and fourth generation, sometimes, before they are perfectly eradicated, it may require the renovating process for three or four years. The main reason why the public has been faithless as to the success of this remedy, is, that the experiment has been tried only for one year. This not proving effectual, has led to discouragement and unbelief. Let the experiment of renovating potatoes on Mr. Smith's plan, be universally adopted and followed up for a series of years, and *if any thing can arrest and eradicate the disease*, this will do it. The general degeneracy shows that renovation is what it needs, and how can it be renovated except in the above way?

3. *The potato disease*, having been now for some years in operation, and ascertained to be nearly universal wherever potatoes have been cultivated, is evidently *not accidental*, arising from soil, climate, atmosphere, rain, or sunshine, but *constitutional*. Hence the remedy must correspond with the disease. And what can reach the case but a process of renovating, by planting seed? This process may be commenced and followed up by every farmer and gardener, and the result cannot fail to be beneficial.

H. A. PARSONS.

REMARKS.—If it were true that the potato disease

is wholly "constitutional," as our correspondent supposes, the vegetable would be equally effected in all locations, which is not the case. Even in England and Scotland, there are districts where the disease is not known, and where the crops have continued to be as good as ever, both as to quantity and quality. In the essay on this subject, written by Prof. J. P. NORTON, (Transactions of the N. Y. State Agricultural Society, for 1845,) it is shown by answers given to queries propounded by the Agricultural Chemistry Association, that in five counties of Scotland the potatoe had not been effected by any disease. So in this country, we could name places where it has never suffered from the malady which in many locations has destroyed the crop. Again, it is not those varieties, as this theory would seem to imply, which have been longest propagated from the tuber, that are most effected. Take, for instance, the long reds or merinos, which were introduced here some forty or fifty years since, from the river La Plata, South America, and which had been there previously cultivated for an unknown period: they are more generally productive and free from disease than any other kind within our knowledge. While, on the other hand, the Neshanoeks or Mercers, the Carters, and some other kinds, known to have been produced in this country within a comparatively few years, are the most weak in constitution and most subject to disease.

We regard the production of potatoes from the ball, as similar to the production of apples or other fruit from the seed, and we should no more expect a "renovation" in one case than another. The scion or bud, also, answers to the tuber, and if it can be proved that varieties of fruit degenerate from being propagated by grafting or budding, we should regard it as evidence that the potato might be affected in the way indicated.

But that an advantage may accrue from raising both fruit and potatoes from seed, we readily admit. We do not, however, regard it as a means of renovating species; but as a means of multiplying varieties, and thus affording opportunities for obtaining superior ones by selection. It is the only way in which superior kinds can be obtained. Each kind has its peculiar natural habit, and when it has become fully developed, we are able to judge whether the propagation of the kind would be advantageous or otherwise. Of the almost infinite number of apples which have been produced, a few only, comparatively, have been worthy of cultivation; and the chance of obtaining from seed a superior sort, is, perhaps, as one to a hundred. Our

experience teaches that it is so with the potatoe. We have at various times raised from seed many kinds, and from the number have procured a few really superior ones; while the remainder and larger portion, had no properties which rendered them particularly valuable.

In our number for November last, we cited an instance of potatoes having been produced from seed, during the past season, under our own observation. Of the six or seven kinds there spoken of, nearly all were evidently effected by the "potatoe disease," at the same time that most other potatoes in the neighborhood were attacked. One or two kinds appeared to have more natural stamina than the others, and continued vigorous till the close of the season. They may, on further trial, prove valuable.

It should be remarked, that the practice of continuing to plant seed from only the *best kinds* of fruits or vegetables, for several generations, may reasonably be expected to produce greater improvement than if no care was exercised in this respect.—Eds.

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SENECA COUNTY, N. Y.—Extract of a letter from JOHN JOHNSTON, Esq., to the Cultivator:

"I am sorry to say our potatoes are rotting very fast; mine were perfectly sound when I gathered, and yet I am afraid I shall not save any for seed. More than one-half are now rotten, and rotting daily."

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CHESTER COUNTY, PA.—Extract of a letter from Dr. A. BUSH, to the Editors of the Cultivator—"The potato rot prevailed to some extent in this county. In some instances, the quantity raised has not equalled the amount of seed. In all cases the crop is light; my own not excepted. The season has been exceedingly rainy and hot, with frequent flooding showers, predisposing potatoes to rot in the highest degree, and continuing so throughout June, July, and August. About the 16th of July symptoms of the rot appeared in my potatoes, but was confined to flat and clayey spots, where the excess of water could not readily run off. The tubers in such situations became diseased, whilst the tops looked healthy, and from continued and careful observation, I am confirmed in the views I expressed in the essay, published in the Transactions of the N. Y. State Ag. Society, respecting the nature of the disease. I have not observed that any variety is less subject to the rot than the Philadelphia Mercers, of which I had planted about eighty bushels, and harvested about 300."

CULTIVATION OF SWEDISH TURNEPS.

[We have been furnished with the following letter in reply to a request from the Hon. A. STEVENSON, of Virginia, for information in relation to the culture of the Swedish turnep, or Ruta-baga.—Eds.]

Albany, Dec. 15, 1846.

HON. A. STEVENSON—*Dear Sir*—It is with much pleasure I answer your inquiries on the cultivation of the Swedish turnep. I regret my inability of description; but shall be happy to disclose to you my mode of culture by which I usually obtain success.

I regard the turnep crop as one of the most important to the English farmer, and believe it to be equally as productive here as in Britain, under the same careful culture.

In England, the turnep is the renovator, and the farmer's best friend; light soils would be utterly useless, and impoverished, were they not aided by this valuable

root. England has the advantage over America, as to climate, which will there admit of turneps being fed off on the land, and the treading of the sheep in winter is a very great advantage to a porous soil, which is peculiarly adapted to the bulbous tribe of vegetables. Turneps can be grown to advantage on any kind of soil, except a stiff clay; in such a soil the roots cannot penetrate, the fibres cannot search for food to feed the plant, unless the soil is kept soft by continual moisture; but sand, gravel, loam, or stony soil, are best adapted to turneps, and are the most kind and grateful to them. My mode in this country, by which I have been remarkably successful, is as follows:—

The first crop of eight acres I sowed on the river flats, a stiff loam, which was yearly overflowed in the spring. I could not prepare the land according to the system I pursued in England previous to sowing. I

could only plow it once, before the manure was put on, and then plowed it in. The weeds sprang up with the plants, and it required an immense amount of labor to keep them from choking them. Notwithstanding this, I kept the weeds down sufficiently to keep the turneps above them, and they flourished beyond my expectations. The compost I applied was so agreeable to their taste, that they fed upon it, and thrived exceedingly. It was a mixture of barn-yard manure, the refuse of slaughter-yards where thousands of cattle had been slaughtered, drawn into a mine or pile in the winter, and all turned over, and mixed well together in the latter end of March. Give me such compost as this, so far decayed as to cut out with a shovel, and I shall never fear of obtaining a crop, unless the season is excessively dry. Such a composition very soon dissolves, and forces the plant in its early stage out of the way of the fly.

This crop was sown broad-cast at four different periods; the first, the early part of June, (say the first week;) the second, ten days later, and so continued until the whole crop was sown. The object of the different sowings, was to take advantage in hoeing; as soon as the first was finished, the second was ready to commence, and when the last hoeing was completed, the first needed a second hoeing; and when at the end again, they were safe from the weeds, and required nothing more doing to, until pulled and put into the cellar.

I cut the tops as I pulled them, and drew them into the poorest part of the pastures; the cattle eat them with avidity, and left their manure in the place it was wanted. This crop, as near as I could "guess," averaged about twenty tons to the acre. The second crop was on a similar soil about the same number of acres, and one-half of it under different treatment. Part of this lot was what is here called *old meadow*, but it was a complete mass of couch grass. I had some breast-plows made, pared off the sod and burnt it, and the quantity of ashes exceeded any thing I ever saw in England, under the process of "*paring and burning*," so generally practiced there for a turnep crop. The ashes were all the manure applied, and although sown later than those to which the compost was applied, did not incur one quarter of the expense in hoeing, the weeds having been previously destroyed by burning.

The crop was equally as good as the former. I drew these tops on the pastures as before. I "guessed," this crop as averaging twenty-five tons per acre. The third crop was a field of about twelve acres, of old pasture, and like the previous one, a bed of couch-grass. Part of this field was a dark sand, and the other part a lighter sand, either of them an excellent soil for turneps. The whole of this field was breast-plowed, and produced only about half as many ashes as the former one, therefore, I added a slight dressing of compost; and although a very dry season, I should say the average was certainly twenty-five tons to the acre. If the season had been favorable, the weight of produce would have been most extraordinary. In August and September, the leaves were all dried up and withered. A heavy rain came early in October, and they grew with exceeding rapidity; if they had had six weeks more to have grown in, as they would have done in England, they would have surpassed any crop I ever saw grow there. The fourth crop was a similar soil to the latter, but had been miserably impoverished; the previous crop was a mixture of Canada thistles, weeds, and a small portion of barley, not sufficient to pay the expense of harvesting. To this crop was applied the same quantity of compost as the first crop. The dry weather in August and September very much affected their growth, the tops became mildewed, but I think they were equal to any previous crop, and would have compared with the best crops in England. They generally grow there un-

til Christmas, and sometimes the middle of January. I should say that your climate in Virginia possesses advantages in this respect over a northern clime; and I am strongly inclined to believe, they would stand the frost the whole of the winter; if so, the tops in the spring will produce you very early food for ewes and lambs, and enable you to send early lambs to market.

These statements of crops, are somewhat like "*guess works*" as respects the weight per acre. I judged from the number of loads drawn, having weighed a bushel basket full, and measured the wagon box with the basket. This gave me the impression at the time of the amount of produce.

The true way to grow Sweedes is this. Plow your land as soon as the grain-crop is off; then all the pernicious seeds exposed to the atmosphere will vegetate. Let them grow for a month, then plow again, and turn them under; the seeds on the surface will again spring up, and the winter will destroy them. The more you stir your land, so much the more you make your weeds grow, by bringing those seeds that have been lying dormant, to the surface, which when once sprouted are thus destroyed, leaving your land free from refuse and weeds, to receive the crop you intend to grow upon it, and which saves you more than half in hoeing.

By a continuation of this system, and sowing clear seed grain, you keep your land free from weeds, which I consider a very prominent item, not only in the expense of labor, but in the unprofitable exhaustion of the soil. By letting your various kinds of manure decay in the compost heap, and mixing them well together, you destroy all injurious weeds therein contained, and you get a greater benefit from it in the early part of the season, when the plants require forcing to shade the ground with their leaves.

My object in sowing broad-cast, is to put enough seed on the ground, so that the fly may feed on a part of them and then leave enough for a crop. A man who understands hoeing turneps broad-cast, can do as much in a day as he can in the drill. and I never want to see a horse amongst them. If the land is well pulverised, and reasonably free from weeds, a man can hoe the first time, half an acre per day. The second time he can do more, but to effect this he must do it while the plants and weeds are young; the sooner after the second rough leaf appears, the better.

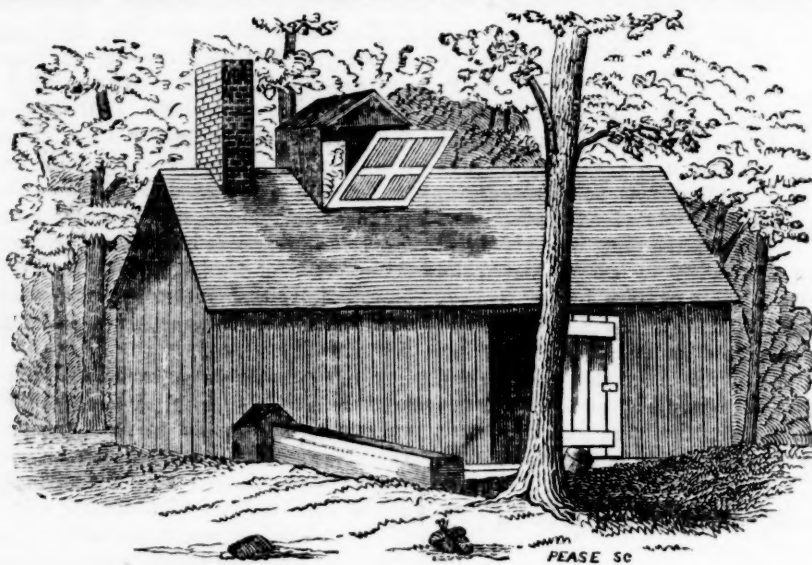
There are but very few good turnep hoers; most men are afraid to exercise their hoe freely, leaving them much too thick, and do not bear sufficiently hard upon it to go to the bottom of the roots of the weeds, which take root again and grow as rapidly as ever. I generally leave them from eighteen inches to two feet apart, and think I can obtain a greater weight by the latter space than the former. Great care must be taken to leave the plants singly. An experienced hoer will seldom have to put his hand to a plant unless they are very thick; they are principally drawn by the corner of the hoe made for that purpose.

I put the roots in a long cellar, the whole length of the stable, about fifteen feet wide, ninety feet long, and ten feet high, putting a slight covering of straw on the top. In this way they have kept well the whole of the winter, and until the middle of May, sometimes sprouting in midwinter. I cut them for my young stock, and feed them whole to those whose teeth are well settled; about a half a bushel per day to the latter, and less to the former.

I am, dear sir your, ob't servant,

W. H. SOTHAM.

GREAT CORN STALK.—M. B. Bateham, of the Ohio Cultivator, has received a cornstalk from Kentucky, which is 7½ inches in circumference, (2½ inches, diameter,) 19 feet high and 12 feet to the ear.



MANUFACTURE OF MAPLE SUGAR.

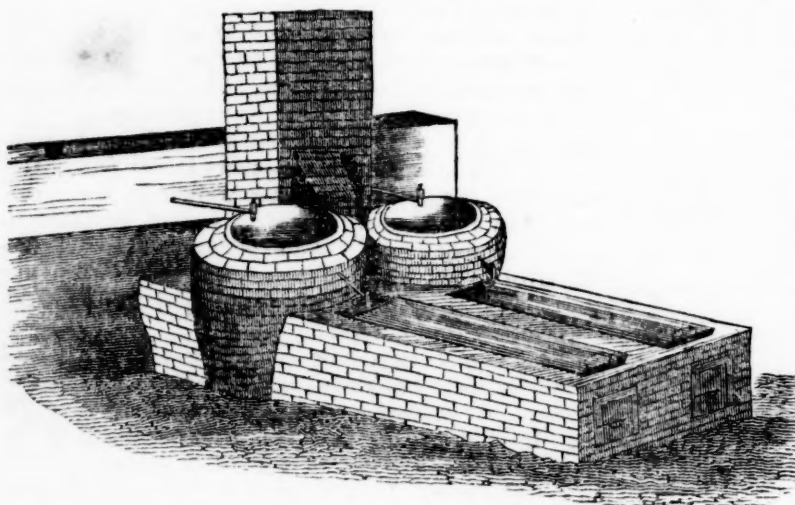
THE manufacture of maple sugar is a very important business to some of the northern states, and if proper attention were devoted to it, might undoubtedly be rendered much more valuable. We have no means of ascertaining the precise amount annually produced in the Union, but according to the estimate of the Commissioner of Patents for the year 1841, the following states produced quantities as herewith affixed, nearly all of which was probably from the maple:

Maine,.....	663,592 lbs.	Maryland, ..	39,892 lbs.
N. Hampshire, 169,515 "		Virginia,...	1,557,206 "
Massachusetts, 496,341 "		Kentucky,..	1,409,172 "
Rhode Island, ..	55 "	Ohio,.....	7,109,423 "
Connecticut, ..	56,372 "	Indiana,...	3,914,184 "
Vermont, ..	5,119,264 "	Illinois,	415,756 "
New-York, ..	11,102,070 "	Missouri,...	327,165 "
New-Jersey, ..	67 "	Michigan,..	1,894,372 "
Pennsylvania, 2,894,016 "		Wisconsin, ..	147,816 "
Iowa,.....	51,425 lbs.		

which all the operations are performed. Fig. 8 represents the apparatus for holding and boiling the syrup. The arch of brick-work is five feet six inches broad, and nine feet long to the back of the chimney. In front of this arch, will be seen two sheet-iron pans, each four feet long and twenty-one inches wide. Directly in the rear of each of these pans, is a caldron, connected with the former by means of a tube and stop-cock.

In the rear of the whole, is a large reservoir, or trough, capable of holding nearly eight barrels, being connected with the kettles in the same manner as the kettles with the pans, and in the rear of this, another of the same dimensions, in both of which the sap is deposited. When the "works" are in operation, a constant stream is running from the reservoir into the kettles, where the sap becomes heated, and is then passed into the pans by a constant stream, and is there reduced to a capacity for sugaring. The syrup is then removed, and is sugared in another department.

Considerable care should be taken in setting the pans and kettles, in order to save all the heat. The space under the pans is as wide, and no wider than the bottom. At the farther end, the flue rises six inches, in order to throw the heat against the bottom of the pans. About four inches above the bottom of this elevated flue, the bottoms of the kettles are set, the arch being headed up to the kettle, making the flue about ten inches deep; then from the rear, the flue passes in a horizontal direction quite round the kettle, and leads into the chimney. It will be found expedient to keep the flues separate, some five or six feet in the chimney. The building is ventilated at the top by a door which is managed by means of a pulley.



Sugar Boiling Apparatus.—(Fig. 8.)

When in Vermont in 1845, we saw some specimens of maple sugar of a quality much superior to what is generally met with, and were quite interested to learn the process by which it was manufactured. At our request, we have been furnished by Mr. LYMAN HALL, of Shelburne, Vt., with drawings and a description of his apparatus for making maple sugar. Above we give a view of the building which contains the fixtures, and in

Mr. HALL made 1,200 lbs. of excellent sugar in 1845, and Mr. HENRY S. MORSE, a neighbor of Mr. H.'s, made 1,000 lbs. It would have readily commanded 10 cents per pound by the quantity..

Maple sugar may be produced of a quality not inferior to the best double-refined cane sugar. Mr. JOEL WOODWORTH, of Watertown, N. Y., has several times taken the highest premiums of the State Agricultural Society, and the article produced by him is superior to

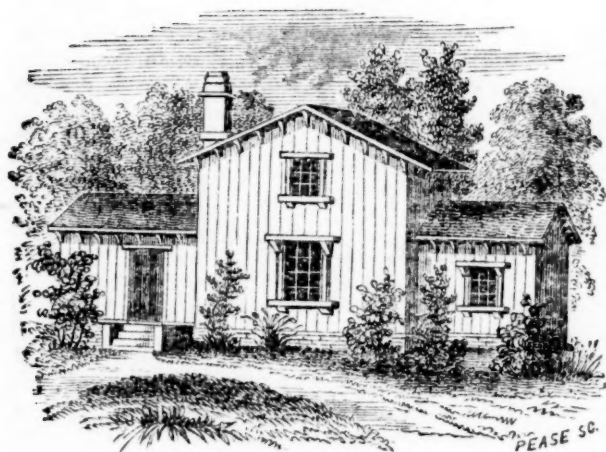
any other of the kind we have ever seen. The committee who awarded Mr. W. the premium in 1844, in their report, say—"We have never seen anything of the kind at all comparable with this, either in the perfection of the granulation, or the extent to which the refining process has been carried. The whole coloring matter has been extracted, and the peculiar flavor of maple sugar is completely eradicated, leaving the sugar fully equal to the best *double* refined cane sugar to be found in our markets."

As Mr. WOODWORTH's statement in regard to the mode of making and clarifying his sugar may be useful to others, we give the substance of it herewith:

"In the first place, I make my buckets, tubs, and kettles, all perfectly clean. I boil the sap in a potash kettle, set in an arch, in such a manner that the edge of the kettle is defended all round from the fire. I boil through the day, taking care not to leave anything in the kettle that will give color to the sap, and to keep it well skimmed; at night I leave fire enough under the kettle to boil the sap nearly or quite to syrup by the next morning. I then take it out of the kettle, and strain it through a flannel cloth into a tub, if it is sweet enough; if not, I put it in a caldron, which I have hung on a pole in such a manner as to be taken off and

on at pleasure, and boil it till it is sweet enough, and then strain it into the tub and let it stand till the next morning; I then take it and the syrup in the kettle and put it all together in the caldron, and sugar it off. I use to clarify, say 100 lbs. of sugar, the whites of five or six eggs, well beaten, about one quart of new milk, and a spoonful of saleratus, all well mixed with the syrup before it is scalding hot. I then make and keep a moderate fire directly under the caldron until the scum is all raised; then skim it off clean, taking care not to let it boil so as to rise in the kettle before I have done skimming it. I then sugar it off, leaving it so damp that it will drain a little. I let it remain in the kettle until it is well granulated. I then put it into boxes, made smallest at the bottom, that will hold from 50 to 70 lbs., having a thin piece of board fitted in two or three inches above the bottom, which is bored full of small holes to let the molasses drain through, which I keep drawn off by a tap through the bottom. I put on the top of the sugar in the box two or three thicknesses of damp cloth, and over that a cover, well fitted in, so as to exclude the air from the sugar. After it has done or very nearly done draining, I dissolve it, and sugar it off again, going through the same process in clarifying and draining as before."

PLAN OF A LABORER'S COTTAGE.



Elevation—Fig. 8.

THE constant drudgery and fatigue of boarding half a dozen hired men, is too well known to most housewives. This is indeed regarded by a large portion of country residents, as the chief drawback on the enjoyment of the farmer's life. This labor may be much diminished by the erection of a good, pleasant, and substantial laborer's cottage, and the employment of married men, of sober and steady habits, who obtain their meals at their own houses. Having formerly had occasion to erect a small house for this purpose, we have concluded that a description, with figures, would be acceptable and useful to some of our readers, as it has been found simple, cheap, and not bad-looking.

It is built by nailing the plank used for the exterior covering on the frame, in an upright position, and then covering the joints with strips about two and a half inches wide. Similar strips are nailed on the joints inside, and these receive the lathing. These two sets of strips, if well nailed on, render each joint sufficiently tight in such a house without matching, or grooving and tonguing the edges. The outside surface being left rough for the reception of successive coats of whitewash,

entirely obviates the expense of planing, and hence a less costly kind of material may be used. The color of the whitewash may be softened by a proper admixture of red and yellow ochre, and a little lampblack. The only parts outside, needing paint, are the window and door frames, and doors. A repetition of the whitewashing once a year, for the first two or three years, and less frequently afterwards, will maintain its good appearance. A coat of paint on the rough surface, will be more durable than if applied to one rendered smooth by the plane.

The annexed figure will show the internal arrange-

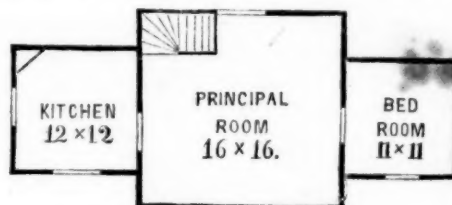
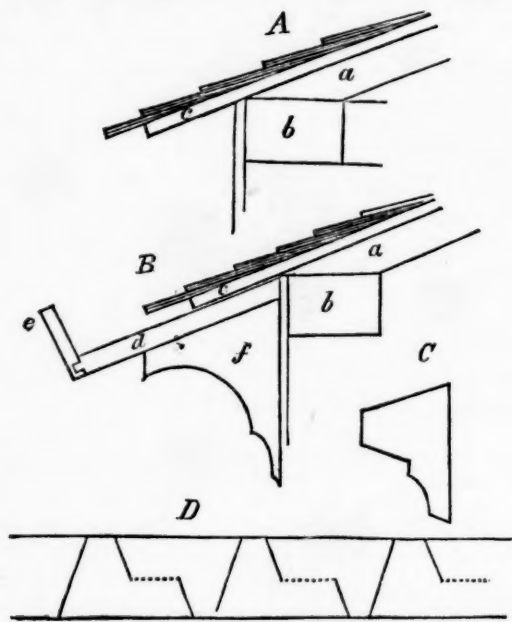


Fig. 9.

ment. A cellar is situated under the kitchen; and a spacious chamber over the principal room, may be divided into two small bed-rooms. The kitchen ceiling is lathed on the rafters,—the chimney is built on the floor of the chamber in the principal part, so that the pipe from the cook stove passes horizontally into it. The pipe from the stove in the principal room, passes through the floor above into the same chimney. The floors for the kitchen and chamber, are made of rough boards.

The mode of constructing the eave troughs is shown in fig. 10, and they are found cheap and good. *A*. represents the eaves simply, *a* being the lower end of the rafter, resting on the plate *b*, supporting the edge of the roof-board *c*, which projects about eight inches. *B* exhibits the same with the eave-trough attached; which is done by placing a sound and durable inch-and-a-half plank, *d*, directly under the roof-board, and projecting several inches beyond it, supported by the



Eave Troughs.—Fig. 10.

brackets, *f*. The strip *e*, is added by matching, forming the trough. A coat of good paint completes it. A lining of tin-plate, or zinc, would be more substantial. *D*, shows the mode in which the two inch plank, for brackets, is cut up without waste. The cross lines are for the saw, the dotted lines where the wood is separated by splitting. *C*, is a finished bracket.

The advantages of this plan are,—considerable room is afforded at a very cheap rate, the whole house, when completely finished, not costing \$200; the heavy timber frame is obviated, as the two wings, being small, may have a frame of scantling four inches square, and

the central part seven inches square. Studs are not needed. The wings and central parts serve as supports to each other. The outside being coated with colored whitewash, which is quite cheap, the usual objection to an extended outside surface, is removed. The carpenter work is very small.

As many farmers will be controlled in the erection of such houses by the cost, we give below the bill of expense, which they may easily alter to suit prices in different places.

8 sticks of timber, 16 feet long, 4 cts. per foot running measure,.....	\$5.12
300 ft. scantling for braces and rafters,	2.25
300 ft. joists,	2.25
200 ft. scantling for frame of wings,	1.50
600 ft. roof boards,	4.50
700 ft. surface, shingles,	17.50
950 ft. flooring,.....	9.50
1800 ft. 1½ inch plank, for siding, all 10 in. wide,	18.00
800 ft. strips for joints, one-half straight, clear, and handsome,	8.00
1200 ft. lath boards, for three lower rooms,....	7.00
400 ft. plank for windows, doors, &c.,	6.00
Sash and glazing,.....	8.00
Nails and door trimmings,.....	7.00
Cellar wall, mason work, digging, materials,..	20.00
Lathing, plastering, lime, sand, labor,.....	12.00
Painting window frames, doors, &c.,.....	8.00
Brick and chimney,	3.00
Carpenter work,	30.00
Contingencies,.....	9.88
	\$180.00

In many parts of the country, the cost of materials would be less, and in others more, than in the preceding estimate—in case of the house actually erected after this plan, the cost was not \$150. T

CULTURE OF GREEN CROPS FOR SOILING—CARROTS.

EDITORS CULTIVATOR—The September number of the *Cultivator* contained a letter from our friend W. H. SOTHAM, in which he notices the rotation of crops, as cultivated on my farm, for *Soiling Milch Cows*. His favorable notice of my experiment, has induced several of the readers of your valuable journal, to ask of me a statement of the amount of green food raised by me on the twenty acres, on which I soiled sixty cows, for six months. To save time, permit me to trouble you with the following statement for publication in your paper. The whole product averaged more than 12 tons of green food per acre, as you will see by the following table.

5 acres of clover, cut three times,	57 tons.
5 acres of oats, cut twice,.....	41 "
5 acres of corn, cut twice,.....	84 "
5 acres of corn and pumpkins once,	73 "
20 acres in all,.....	255 tons.

The Corn on one acre, (black muck, manured with cow dung, leached ashes and lime,) yielded stalks over ten feet long, planted in drills one foot apart, and four inches apart in the drills, and weighed over twenty tons of green fodder to the acre.

The Carrots noticed by Mr. Sotham, yielded on the average six hundred bushels to the acre, and on some portions of the muck soil, (manured with cow manure and leached ashes,) they were in many instances fourteen and fifteen inches in circumference, and twenty-seven and thirty inches long, and produced at the rate of twelve

hundred bushels to the acre, in beds of one quarter acre each. They were drilled in by machine, (as was also the corn,) in drills one foot apart, and the Carrots thinned to one every four or six inches in the drills. They were weeded by hand at a cost of five dollars an acre, for three times weeding, and pulled and topped for two cents a bushel ready for cellar. Being in muck land they pulled easy; thirty bushels was about a days work for each of the laborers, who were mostly German women. My Carrot crop cost me this year, five dollars an acre for plowing and preparing the land, five dollars for weeding, four dollars for seeding, (including the seed,) twelve dollars for pulling and covering, and four dollars for interest on land, making thirty dollars an acre or on an average five cents a bushel for the Carrots, they being worth in the Rochester market, twenty cents a bushel by the quantity, and retail at twenty-five cents, at which latter price I should clear one hundred and twenty dollars per acre, on my whole crop of eight acres. Is not this a valuable crop? My last years crop of four acres, yielded me six hundred and forty bushels per acre. I intend next year to sow at least ten acres of Carrots, and two acres of Sugar Beets for my cows. Would it be of any interest to you to know how I cultivate them? If so I will tell you next month. I shall always be happy to answer all inquiries. Yours, C. B. STUART.

Rochester, December 4, 1846.

We should be glad to receive an account of Mr. STUART's mode of cultivating carrots and beets.—EDS.

MANAGEMENT IN FARMING.

THE present is a very appropriate season for a review of the past operations of the farm, and devising plans for the future. Every one who has not yet reached the highest summit of agricultural skill and perfection, will, doubtless, wish to make continual advances towards that desirable accomplishment, and the direction of the attention of such to some points in practice, may possibly be of value.

The great secret of success in all kinds of business—the reason why one man becomes rich, while another remains poor—is, *management*. A great deal is said of the importance of *capital* to begin with, and it is indeed a very great convenience. We know many young farmers who utter frequent regrets that they have not as fair a start as some others—they could, as they think, do wonders if they had plenty of means as a beginning. But regrets do not make money. Every one knows, that he who does not reap large profits from a liberal capital furnished him, must be a poor manager indeed. The man who has a hundred acres of land, with one thousand dollars as additional capital, may farm much more satisfactorily than he who has the same amount of land encumbered with a thousand dollars debt. He is two thousand better off, and would be much the worse manager of the two, if his profits from the same land were not decidedly the greatest. That man shows his skill pre-eminently, who, instead of repining at difficulties, surmounts them; who, by superior management, keeps pace with his *longer-pursed* neighbor.

"But," say some, when they hear of an improved mode of farming, "we know this is the best practice, but the fact is, we cannot pursue it—we have not the means, and we cannot get it—we are not rich enough to be thus economical." Now, we hope such persons will permit us to say, that this conclusion proceeds from a want of information. A certain young farmer's expenditures are three hundred dollars yearly; and after the most rigid economy in every particular, so that a single dollar could not be retrenched, he saves nothing. Another young farmer, with the same means precisely, and with equal economy, saves two hundred yearly. What is the reason of this difference? What the secret of the better success of the latter? The answer is—a *better application* of the same means.—or in other words, *better management*. Hence, the vast importance of understanding the best application of means.

We will venture to suggest a few of the particulars in which we think many of our farmers might make more or less improvement—some of them very decidedly so.

One of the first of these is, a neat and judicious *laying out* of their farms,—for economy in fencing; for convenience of access to all their fields; and in such a manner, that each crop may occupy as nearly as possible its own field, so as to admit of a good system of rotation. Hence, the lane or farm-road should be good, hard, and level, to admit of easy cartage of manure and crops, to and from all the fields. Hence, too, if the land varies in quality, that of similar character must be as nearly as practicable in the same enclosure, so that meadow and pasture may comprise the wet, and arable land the dry, and the most sterile may be brought, separately, into an enriching course. A farm so laid out, that cattle may obtain water of themselves, may save whole weeks of labor in driving them to water, &c., every year. Indeed, the saving of labor by a well laid

out farm, can hardly be estimated in the multifarious operations constantly taking place.

A careful saving, manufacture, and good application of *manure*, would promote a great improvement with many. Much of the value of the products of the barn-yard are lost from want of a good supply of straw, dried muck or peat, to absorb the liquid portions. Much is lost by its wrong application, and especially by the want of its thorough admixture with the soil by repeated plowings and harrowings. From our own personal observations, we are perfectly satisfied, that the benefits from manure might be very easily tripled on nine-tenths of the farms of the northern states. We do not mean here to include, at all, those who suffer their manure to remain in the yard five years, till nine-tenths is lost by fermentation and vapor; nor those who do not apply it at all; nor the man who built his hog-pen across a stream, that the cleanings might be conveniently shoveled into the water and washed away. Manure may be even well applied, and well mixed with the soil, and then wasted by an exhausting course.

A careful, constant, and vigorous attention to weeds, would work wonders on some farms. There are two modes of disposing of these costly intruders;—one, is to destroy them thoroughly when only an inch high, when the work may be very easily and effectually done, and before the soil and crop have been injured by their growth; and the other, is to allow them to get a foot high, thus doing great damage, and then to make an assault upon them at an enormous expense. "O, but we did not intend to have suffered the weeds to get so large, but we were backward in our work, and were disappointed in our hired help." But you must remember that good management causes a man to take time by the forelock—or, to speak more strongly and roughly, to take him by the snout;—and you must endeavor to secure such help as will not disappoint you. Many farmers err by attempting to do a great deal with a little help; the consequence is, every thing is hurried, and every thing behind-hand,—and then more help must be ultimately hired, or the work neglected at still greater loss. Would it not be cheaper to hoe an acre of carrots with three days' work, while the weeds are as yet no longer than small feathers, than to hoe them with ten days' work, when the weeds have attained a growth of two tons to the acre? It would be cheaper to hire a man in time, at double price, and pay him with borrowed money at eighty per cent interest, than to permit the delay—though neither are necessary.

We need not here go into a minute examination of all the various items of good and bad management, which have been elsewhere fully treated of; but we may merely recall a few things to remembrance. The loss of hay and other food of sheep and cattle, by their exposure in open fields to cold winds in winter, causing a consumption of nearly double the amount needed for them in warm places, would, in a single season, be enough to erect good and cheap shelters, to say nothing of the improved condition of the animals, and security from loss by death. A great saving would often result by taking pains to select fine animals to breed from. A fine and handsome animal is as easily raised as a bad and ugly one, and frequently commands a double price in market. A similar advantage would result from selection of seed. Many days labor may be annually avoided, by procuring the very best tools, where they are such as are much in use. A vast amount of valuable time, and

some fretting, may be saved by having a place for everything and everything in its place, and habits of leaving things out of order, which are very hard to conquer, and which, like all kinds of carelessness, are the bane of fine farming, be prevented. And it is of vital consequence, that everything be done at the right season. A few days delay, not unfrequently results in great losses; sometimes the entire *profits* of crops, or their amount over and above their cost of raising, are destroyed by planting out of season. To prevent confusion and embarrassment, every thing should be before the

eye of the farmer at once, that nothing may be neglected; and those who can think of but one thing at a time should have a memorandum book, constantly in the pocket, for noting down and for reference to at all times, every thing, small and great, important and unimportant.

It is by attention to these things, and many others, that some farmers are enabled to obtain large profits from their farms; while others, on equally good land, as great in extent, and with as much capital as a beginning, make but a scanty living, and obtain no surplus revenues with all their industry and frugality. T.

THE ORCHARD AND THE FRUIT GARDEN.

GRAFTING THE PEAR ON THE APPLE.

T. S. HUMRICKHOUSE, of Coshocton, Ohio, in a communication published in Hovey's Magazine, gives a minute account of the results of his experiments in root-grafting the pear on the apple. As frequent inquiries are made by the cultivators of fruit, as to the success of this practice, in consequence of the difficulty of procuring pear stocks, we believe a brief abstract of these experiments may be useful.

The first trial was made in 1838, by only eight grafts, one-half of which grew the first season, but died the second and third.

Seventy-six were grafted in 1839, about one-half of which grew the first season, but nearly all of them subsequently died, or became very much stunted in growth. None appeared to have made roots of their own.

Forty-eight were grafted in 1840. Twelve grew. Among these, two out of five of the *Passe Colmar*, grew, and after remaining stationary, or nearly so, for three years, threw out roots of their own, on which they have become established and thrifty trees, the apple root having rotted entirely away. Out of four of the *Capiumont*, and three of the *Urbaniste*, only one of each grew, which now appear to be throwing out roots of their own, and are becoming thrifty, after having, for several years remained stationary. Out of five *Bezi V*, one has thrown out its own roots, and become thrifty. Two out of four *Bartletts* grew and flourished, without being dwarfed at all. They have both borne; on one the only fruit was small and deficient in flavor; the dozen or more, "of fine appearance," on the other tree, were all stolen by boys, before examined.

In 1841, fifty-nine were grafted, about one-half of which either failed or came to nothing; the remaining half, of the *Seckel*, about three-fourths grew, one-half of which have become thrifty.

One hundred and seventeen were grafted in 1842. About one-third grew; most of these appear to have done but poorly.

In 1843, seventy-two of the *Bartlett* and *Easter Beurre* were grafted, about one-half of which grew, and a number are thrifty. In all the experiments, these, with the *Seckel*, appear to have done best. Of several other varieties, the grafts were entire failures.

On the whole, it will be perceived that only a very small portion have proved to be good trees, and in some seasons, none of them. The apple roots selected were one-half to three-quarters of an inch, and some an inch in diameter, two years old, and they consequently must have been quite thrifty. We have seen many hundreds of the pear grafted on apple roots, not one-half of which grew; and among all which did grow, not one has become a thrifty tree, but they have remained nearly sta-

tionary for several years, gradually decreasing in number by successive deaths.

From the preceding experiments we may infer, that by selecting the largest and thriftiest stocks, and a few particular varieties, in the most favorable seasons, and in the very best soils, partial success may be expected; but, under ordinary circumstances, the prospect of succeeding with any is so small, as to render the practice not one to be recommended. We have seen in some of the English periodicals, directions for encouraging the emission of roots at the point of junction of pear grafts on apple stocks, by making small slits with narrow gouges; but further information, as to success usually attendant, was not given.

We have known some varieties of the pear, and especially the *Summer Bon Chretien*, to be grafted on large apple trees, at standard height, with good success. It happened only in some seasons that the fruit was sensibly altered from its usual character. In one of the experiments already spoken of, one of the *Seckel* grafts on an apple root which bore, yielded fruit of double the usual size, of a pale green color, of excellent flavor, perfectly melting, and without any grittiness whatever. The fact that dissimilar stocks often change considerably the size and quality of pears is well known; and it becomes a very interesting subject of inquiry for nurserymen, amateurs, and the raisers of fruit for market, whether an advantage might not result in some cases, by the employment of apple stocks for pears, to be grafted on large trees at standard height. If, for instance, the *Seckel*, the richest of all pears, but diminished in value by its very small size and very slow growth, could be doubled in size, and the trees soon made productive, by grafting on large apple trees, without lessening its delicious qualities, it would be a most valuable discovery. The result just stated, on the authority of T. S. HUMRICKHOUSE, and which he says is corroborated by the statement of A. H. ERNST, an eminent nurseryman at Cincinnati, indicates the strong probability that such a result may be looked for in some cases. Is not this suggestion well worthy of trial? Those who have large apple trees can easily make the experiment—and if it should happen to fail, the loss will be very small, and the trees remain, but little injured. T.

FRUIT CULTURE ON MARTHA'S VINEYARD.

MESSRS. EDITORS—It is over twenty years since I began to take a Horticultural publication. Your excellent paper (*The Cultivator*,) is received, and perused with much pleasure. The knowledge I have obtained, is worth ten times the cost of the paper. In fact, the perusal of them, has caused an entire revolution in my mind. Twenty years ago, I did not think I should

ever take the pleasure I now do, in cultivating a small garden.

From my earliest recollection, it was said, "there is so much salt in the atmosphere, it is impossible to raise good fruit on this Island." There were some orchards on this Island, but the fruit was small and knotty. Many of the farmers had got almost discouraged. I examined some of the orchards, and concluded that the bad fruit was the result of bad culture, or rather, no culture at all.

Fourteen years ago, I set out a few apple, pear, quince, cherry, and plum trees, grape vines, &c. I have never seen better fruit in Boston or New-York markets, than I now raise. Our people are now convinced that good fruit can be raised, and they begin to show their faith by their works. Last year, the inhabitants bought about \$700 worth of trees. I do not think that one-half that sum was ever before expended for fruit trees, since the white man first came here.

It has been said, that Newtown pippins would not do well so far North. I have but one tree of pippins; last summer that tree bore the largest and handsomest fruit by far, that ever I saw.

For fourteen years, I tried to raise peaches, but the few I raised were miserable, and I had become almost discouraged. In the spring of 1844, I selected three trees, and put about a peck of fine charcoal around each. It was a benefit, but not so great as in the following years. In 1845, they bore some good fruit. In 1846, the three trees bore a tolerable crop of excellent peaches. Those around which there was no charcoal, bore no good fruit, and if nothing is done to prevent it, will soon die.

For ten or eleven years, my grape vines were pruned sparingly. My grapes moulded, they were small, they ripened late, and but few were fit to put on the table. Three or four years ago, I bought Hoar's treatise on the cultivation of the grape. I pruned according to his direction. I can now raise excellent grapes, free from mould, (or mildew;) they ripen early, and are as good as heart can wish.

The reason why our vines require so much more pruning than yours, is because the climate differs so widely from yours. We are 90 miles south from Boston, yet we find it eleven degrees colder here in the summer, than it is in Boston. In order to satisfy some of my neighbors, I left four vines without pruning, on each side of the four I pruned close. On the four vines there was not one bunch well filled. On each side, the grapes were excellent. Here, and to the north of us, I am satisfied the vines require much more pruning than they do to the south of us. The last summer the apple trees throughout this Island were infested with aphides in such abundance as was never known. The fruit became worthless. When I first perceived them on my trees I diluted some oil soap, and with my syringe sprinkled the trees. Five days afterward I wet them again. I have not been troubled with them since.

I have a pumpkin sweet apple tree, set out fourteen years ago; eight years since the ends of the limbs began to die; I commenced pruning, and cut about six inches below the dead part; they continued to die, till I eventually cut off the whole head. The trunk appears to be perfectly sound. A new thrifty head formed. The last spring, the ends on the northwest side began to die, and I again commenced cutting, and have cut off about one-third of the top. I have examined the roots and they appear perfectly sound. As it has borne no fruit, I think I must cut it down, as a cumberer of the ground. As it is in a row of trees, I do not like to cut it down. Can I do any better than cut it down and set out another?

ALLEN COFFIN.

P. S. I planted six rows of potatoes; when they were five or six inches high, I put half a pint of un-

slacked ashes on each hill, of every other row. Where I put ashes there was nine bushels; without ashes, there was seven bushels and a peck. I planted 12 rows of potatoes, July 12th I cut off the tops of alternate rows; the cut hills produced twelve bushels, the rows that were not cut produced fourteen bushels.

BUDDING FRUIT TREES.

EDS. CULTIVATOR—I notice in your October number some remarks by R. T., on Budding Fruit trees; desirous of adding my limited experience, I think it suggests a still further improvement. In August 1845, I budded in the usual manner, one dozen Peach trees; they were very small, about the size of a goose-quill near the ground, and the sap so sparing that only half of them took; these were transplanted in March, cut off, and grew about five feet in height; the remaining six I concluded to experiment on—as soon as they had shown half an inch of green sprout, I inserted buds from old trees in the usual way, tying them neatly with bass matting, and then with the finger, covered the whole insertion, except the point of the bud, with a little moist adhesive clay; part of the top was then clipped off, the buds adhered and started in ten days, and in a few weeks attained a foot in length, when I cut the old wood off smooth to the inoculation. On measurement this day, there is from seven to eight feet growth from the bud inserted, in height, and as clean, straight and thrifty trees as one could desire to transplant into an orchard, far superior indeed, to the six transplanted in the spring, whose buds had taken the autumn previous. This method requires little more care and watchfulness as to time, but is preferable, inasmuch as you have the whole summer before you in case of failure; you get a fine growth, as much so as from the natural wood, and that without injury to the stock, whilst trees budded and cut off in August, sometimes die; and if they live and the bud starts, they attain but little growth, the stock becomes stunted, the bark hard and dry, and the growth the following year no more, if as much as you would have obtained from the same bud left until spring.

N. P. CROWELL.

Bluffton, S. C., Nov. 21, 1846.

YELLOW IN PEACH TREES.—A correspondent of the American Agriculturist, recommends cutting off peach trees thus affected, even with the ground, and then the roots will sprout up and make new trees. Now it happens that so contagious is this disease, that if the axe or saw used in this proposed operation were applied to a healthy tree, it would communicate the fatal malady; and that proposed method would be as ineffectual as to build a post-and-rail fence to exclude the cholera.

GRAFTING GRAPE VINES.—A correspondent of the Ohio Cultivator, grafted exotic grapes into twelve newly transplanted Isabella vines, by the mode of cleft-grafting, about three inches under ground, using no plasters, but pressing the earth tightly round them. Every one took. They bore well the second year. "This year," he adds, which was the third year, "they are growing with wonderful vigor, and are covered with fine bunches of grapes, while the young ones planted at the same time will not be ready to bear these two years. Since then I have grafted every month from February to June, with equal success, and therefore conclude that if grafted under ground, there need be no difficulty."

APPLE-TREE BORERS.—A correspondent of the Massachusetts Plowman thinks he stifled the borers which attacked one of his apple-trees last summer, by plugging their holes air-tight with soft pine. This is a kind of experiment which seems not likely to do injury, and we see no objection, therefore, to its being tried. T.

DOMESTIC ECONOMY.

SOAP FOR WASHING WHITE CLOTHES.

.....
 EDITORS OF THE CULTIVATOR—I enclose you a recipe for making a washing soap, given to my wife, which she thinks is capital; and has no doubt it will be found very economical, both on the score of saving soap and the wear of clothes. It had been used by the friend who gave it to her. If it proves what we think it will, every subscriber who uses it, can afford to subscribe for five copies of your paper and give them to his neighbors.

RECIPE.—1 gallon good soft soap,
 1-2 gallon water,
 1 ounce sal soda,
 1 gill spirits turpentine,

Mix cold; let it heat gently to a boil; then take it off to cool, stirring frequently until it becomes hard.

DIRECTIONS FOR USE.—To a four or five pail boiler, add a tea cup full of the soap. The clothes want to be soaked over night, or slightly washed in the morning before boiling. Must not be boiled over 20 or 25 minutes; suds and rinse in hot soft water, with a little blueing; fig blue is preferable.

The suds, after boiling, is preferable to hard soap for washing calico.

If these directions are strictly adhered to, it will be found that the washing is done with less labor and fuel, the linen and cotton is of a purer white, and the damage by pounding and rubbing is avoided, rendering the garments much more durable. M. Y.

DIFFICULTY IN PRODUCING BUTTER.

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 MESSRS. EDITORS—I have been for a few years past the wife of a farmer, and, although previous to my marriage, I was quite unaccustomed to a country life, I have been much interested and gratified with the various pursuits and engagements connected with a small farm.

There is one employment that has of late given me "a world of trouble,"—that of churning. Our favorite brindle gives an uncommon supply, for this season of the year, but we cannot with all our efforts and ingenuity, produce any butter. I have availed myself of the experience of my neighbors, but all to no purpose. One has suggested that the cream is too sweet, another that it is too sour, too cold, or too warm, or that the cow is not sufficiently salted; and to all these supposable causes, I have tried to apply the appropriate remedy, (for we have had no less than five unsuccessful churnings.) I have heated the milk, too, when first taken from the cow, but alas, all in vain, and now I have to regret, not only the loss of the butter, but the greater waste of time it has occasioned.

I have sometimes wished, as I have read of the great practical benefits derived by the farmer, from the aid of chemistry, that some kind-hearted chemist would consider milk worthy a place in his laboratory, and the result of his discoveries might cause hope, once more, to dawn on the dreaded churning day.

MARY.

P. S.—We have just purchased one of Kendall's cylinder churns, at the recommendation of the Cultivator, to which we are subscribers, and have used it twice, but as no butter made its appearance, are unable to judge of its merits. There is, however, one evil to which it seems liable—the friction at the ends of the iron axis, produces a collection of black particles of cream, which falls down into the milk. This churn is

highly recommended in some places, and I should like to inquire of any that use it, whether this occurs in churning a moderate length of time, for I should consider it a serious objection. M.

Hempstead, L. I., Dec. 16th, 1846.

NOTE.—We should like to know, whether our correspondent's cow was fed on grass or fodder which had been touched by frost, while she was giving the milk from which no butter could be made? We have formerly experienced the same difficulty, but it was generally, if not always, while the cows ate food which had been frost-bitten. What chemical changes are produced on the food or on the milk, by this cause, have not, perhaps, been determined. We should be glad to receive any suggestions in regard to the cause of, or remedy for the trouble complained of. As to the objection mentioned in regard to Kendall's churn, we are informed by a person well acquainted with its use, that if the axis is made properly smooth, in the first instance, and due care is taken to keep it perfectly clean, no difficulty of the kind alluded to, would occur.—EDS.

HUSK BEDS.

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 MR. TUCKER—Corn husks are becoming an important article of domestic economy. For health, comfort, and durability, they cannot be surpassed. I speak from experience, having used them in my family for more than thirty years; and what is truly remarkable, those beds which have been in use all that time, are to appearance quite as good as new. They are regarded by the medical faculty as conducive to health, and as the best article that can possibly be used by asthmatic and consumptive persons. But the difficulty of separating the coarser from the more delicate fibres, has prevented their being brought into general use. This hindrance has been overcome by the invention of a machine by Mr. C. Boorum, Jr. of New-York, which produced the article in a manufactured state, resembling the finest curled hair. Being nearly as light as feathers, and perfectly free from dust, they form the most pleasant and desirable, and at the same time the most economical article for bedding now in use. Two years since, this gentleman exhibited some of his beds at the fair of the American Institute, for which he received one of its honors. Since this time the demand has rapidly increased. MRS. B. R. VOORHEES.

Amsterdam, Oct. 15th, 1846.

RATIONALE OF CHURNING.—According to Bous-singault, the butter in milk is in the form of minute globules, each globule being enclosed in a very thin, transparent pelicle, which prevents them from adhering together. During agitation by churning, these delicate pelicles break, and the fatty globules immediately unite, and form granules of butter. There is no absorption of oxygen during the process, as was once supposed; the operation succeeds in vacuo, and with the churn filled with carbonic acid, or hydrogen gas.

KEEPING WINTER FRUIT.—The Genesee Farmer says, "A gentleman of experience in these matters informs us, that he invariably puts his keeping fruit in dry sand, and in this way he can keep it two or three months after the usual time, with flavor and freshness unimpaired in the least."

PRESERVING APPLES.—The Maine Farmer says that dry, ground hemlock bark, from the tanning mills, has been used for preserving apples with good results. We think this would be preferable to sand or plaster, which some have recommended.

AGRICULTURAL SOCIETIES.

NEW-YORK STATE AG. SOCIETY.

The annual meeting of the New-York State Agricultural Society, will be held in the city of Albany, on Wednesday and Thursday, the 20th and 21st days of January, 1847, commencing at 10 o'clock, A. M., on the 20th. Farmers, and the public generally, are invited to attend.

LUTHER TUCKER, *Rec. Sec'y.*

Albany, Dec. 10, 1846.

At the monthly meeting of the Executive Committee of the New-York State Agricultural Society for December, held at the Society's Hall on the 10th, the President in the Chair, it was, on motion of Mr. TUCKER, resolved to proceed to the appointment of committees to award the premiums to be competed for at the annual meeting of the Society in January,—when the following gentlemen were appointed for that purpose:

On Farms—Dr. J. P. Beekman, Kinderhook; Anthony Van Bergen, Coxsackie; Wm. Fuller, Skaneateles.

On Experiments and Essays—A. B. Allen, New-York; Prof. Emmons, Albany; Sanford Howard, Albany.

On Designs for Farm Dwellings—Geo. Geddes, Fairmount; Jno. McD. Mc Intyre, Albany; Ebenezer Mack, Ithaca.

On Cheese Dairies—Benj. P. Johnson, Rome; Tho. Hillhouse, Albany; Ira Hopkins, Auburn.

On Butter Dairies—Zadock Pratt, Prattsville; Rob't. Dennison, Salisbury; E. W. Bateman, Venice.

On Selection of Fruits—L. F. Allen, Black Rock; Dr. A. Stevens, New-York; Dr. A. Thompson, Aurora; J. C. Platt, Plattsburgh; Prof. J. Jackson, Schenectady.

On Wheat, Barley, Rye and Oats—Daniel Lee, Rochester; Squire M. Brown, Elbridge; John Wilkinson, Poughkeepsie.

On Indian Corn, Corn Fodder, and Peas—Asa Fitch, Salem; Benj. Enos, Madison; C. S. Benton, Newark.

On Root Crops—C. N. Bement, Albany; John C. Mather, Schaghticoke; S. B. Burchard, Hamilton.

On Hops, Flax, and Broom Corn—Samuel Cheever, Saratoga; John Rankin, Canandaigua; Justus Harwood, Albany.

On Tobacco, Cabbage, Clover, and Timothy seed—E. Marks, Fairport; G. V. Sacket, Seneca Falls; John Walsh, Albany.

On motion of the PRESIDENT,

Resolved, That Mr. Prentice, Mr. Tucker, Mr. Mc Intyre, be a committee to make arrangements for the annual meeting of the Society, in January next.

On motion of Mr. VAIL, of Rensselaer,

Resolved, That the committee on loaning the surplus funds of the Society, appointed at the last meeting, (having reported in part,) be continued with same powers.

On motion of Mr. TUCKER,

Resolved, That the thanks of the Society be presented to LEWIS F. ALLEN, Esq., for a copy of his "American Herd Book," presented to the Society.

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SENECA COUNTY.—We are indebted to JOHN DELAFIELD, Esq., President of the Seneca county Agricultural Society, for the Annual Report of its proceedings for 1846. The exhibition for 1846, exceeded in the general competition and interest, any previous show. Premiums to the amount of about \$300 were awarded. The prize for the best farm in the county, was awarded

to Mr. Delafield, the president; and for the second best, to Mr. John L. Hubbard—for the best acre of winter Wheat, 31 bushels, to J. D. Coe—for the best acre spring Wheat, 25½ bushels, to E. S. Bartlett—best acre Oats, 82½ bushels, to Jason Smith—best acre Barley, 54½ bushels, to D. B. Rorison—best acre Indian Corn, 143 bushels ears, to E. S. Bartlett—best quarter acre Sugar Beets, 320 bushels, equal to 1280 per acre, to R. L. Stevenson. The report speaks of the manifest improvement of the cattle of the county, by crossing with the Durhams, many of which, showing good breeding and careful attention, were at the exhibition. The number of sheep in the county, is stated at 75,000, mostly merinos, producing an average of three pounds per head. On the second day of the Fair, the President delivered a brief address, in which he minutely detailed the cost of raising an acre of wheat, under favorable circumstances, and showed conclusively that wheat could not be raised and sent to the mill, at a less cost than twelve dollars and eighty-one cents per acre—or in round numbers, thirteen dollars per acre. Contrasting this cost with the average market value for five years past, he showed that the average produce worked a loss to the county, and was a ruinous course to the farmer. The President then showed that some of the wheat lands of the county had produced from 20 to 35 bushels, and some more, per acre, and pointed out prominent errors in husbandry which produced the falling off; which he termed "a blameable adherence to erroneous practice," and "censurable want of information."

Officers of the Society for 1847.—John Delafield, Geneva (P. O.) President; Jeremiah Rapelyee, Covert; Alanson Woodworth, Ovid; Wm. F. Coan, Lodi; S. J. Folwell, Romulus; Henry Feugles, Varick; Michael Hoster, Fayette; F. J. Swabey, Seneca Falls; Daniel Young, Tyre; Orin Southwick, Junius, and J. L. Hubbard, Waterloo, Vice Presidents; J. D. Coe, Treasurer; Arad Joy, Corresponding, and Wm. R. Schuyler, Ovid, Recording Secretary.

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MONROE COUNTY.—At the annual meeting of the Monroe Co. Agricultural Society, held at the Rochester Seed Store, on Tuesday, December 8th, the following named officers were elected for 1847, viz:—Samuel Miller, of Penfield, President; George C. Latta, of Greece, Romanta Hart, of Brighton, John Rowe, of Riga, Vice Presidents. James P. Fogg, of Rochester, Treasurer; James H. Watts of Rochester, Recording Secretary.

SHELTERS FOR STOCK.—The *Naturalist*, published at Nashville, Tennessee, gives its readers some important advice on this head, in a few words. It says that no farmer at the North, thinks of exposing his cattle, sheep and hogs to the peltings of the storm; but that it is not so at the South. He adds—"if there be reason in anything, shelters are quite as important at the South as at the North. We have much more cold, rainy weather here, and it is the kind to injure stock more than snows, or the cold northern blasts." This is no doubt true; but stock are not as much sheltered, even at the North, as they should be, or as would be for the interest of the farmer; though the practice of sheltering is much more general here than in the section alluded to. We agree, however, in the remark that shelter, of some kind, is as important there as here, and would be attended with as great advantages in the saving of food and in increasing the comfort of animals.

CORN AND COB MILLS.

OF all the sciences, mechanics have proved the most useful. If implements may be characterized as the right hand of agriculture, mechanical science, in improving their form and construction, may be said to have given cunning to the right hand; for mechanical science, testing the strength of materials, both relatively and absolutely, employs no more material in implements than is sufficient to overcome the force of resistance, and it induces to the discovery of that form which overcomes resistance with the least power. Simplicity of construction, beauty of form of the constituent parts, mathematical adjustment and a symmetrical proportion of the whole machine, are at the present day characteristics of our implements. In saying thus much, for the science that has improved our implements to the state they now are, when compared with their state some years ago, I am not averring they are quite perfect. They are, however, so far perfect as to be correct in mathematical principles and light in operation. No doubt many may yet be much simplified in construction, and I consider the mechanic who simplifies the action of any useful implement, thereby rendering it less liable to derangement, does as good service to agriculture as the inventor of a new and useful machine.

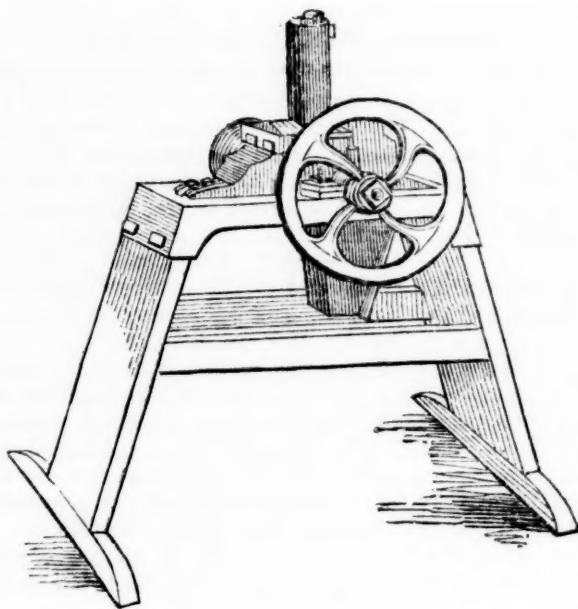
It has been the opinion of most farmers that the cobs of corn were of little or no value, and they have thrown them aside as of no use except for manure. It has been demonstrated by distillation that the cob contains 13 per cent. of nutriment. It is supposed by many that it acts mechanically by distending the stomach, rendering digestion not only easier but much more perfect. Corn or corn meal is generally considered too heating and too concentrated, particularly for working horses, but when mixed with the cob forms a very superior and nutritious food.

My experience teaches me that great benefit is derived by crushing or grinding all kinds of grain for all kinds of stock, and by mixing it with cut hay or straw, a great saving is made.

The introduction of portable mills for grinding corn and cob is of recent origin. Formerly, bark mills were used for crushing the ears, and then it was ground with stones, but the bark mills were not very durable, and millers did not care to grind corn and cob at any rate. Some eight or nine years ago, I carried a load of corn to four mills; at none of them could I get it ground.

In 1842, at the fair of the New York State Agricultural Society, several mills for reducing corn and cob to meal, were exhibited, among which, that belonging to O. Hassey of Baltimore, took the first premium. This machine I have used ever since, and its operation has been very satisfactory.

Since the general introduction of horse-powers, mills have been in request. Demand creates supplies. The inventive genius of our countrymen has been aroused; new mills have, as it were, sprung into existence, among which I would name that of Mr. Pitts of Rochester. This seems to me the most perfect thing of the kind which has fallen under my notice. It is upon the true principles of a mill for this purpose—that of chipping or cutting both corn and cob into sufficiently fine chop, resembling fine samp or hominy. It requires but little power, in comparison to some other mills, to drive it, and is very simple, occupies but little space, and works equally well, whether the corn be soft or hard. It consists of a cast-iron wheel about nine inches in diameter, armed with a series of small chisel-shaped teeth or knives, set like plane-irons in the face, in a



Pitts' Corn and Cob Crusher.—Fig. 12.

very simple manner; one set of teeth following in the space of the others, by which the chipping is done. This wheel is enclosed in a cast-iron box, and on the shaft is a balance wheel and pulley, five inches in diameter, for the power band. These knives can be taken out, ground and replaced in a few minutes; and a new set can be obtained for two dollars and fifty cents. If care is taken to introduce no hard or injurious substance to the mill, one set of knives will last for a long time. It will grind from three to four hundred bushels before the knives require sharpening.

I have had one of these mills in use on my farm, about nine months; it is driven by a small water-wheel, supposed to be about two horse power. With this power it will, when the teeth are sharp, reduce from five to six bushels of corn and cob in the hour. One of these mills has been in operation in this city for grinding feed, such as oats and corn, as well as corn and cob, for supplying cartmen and others with provender, for about one year. The owner tells me that it will grind from ten to twelve bushels per hour, and requires sharpening after three hundred bushels has passed through it; that it requires some skill and attention to keep it in order, and that it will do more work than any other mill he has ever seen.

Knowing that Mr. GEDDES of Onondaga, has had one of these mills in operation for more than a year, I addressed him a note, containing a few inquiries on the subject of its operation. The following is his reply:

"Grinding corn fine," says Mr. G. "and also reducing the cob fine, *takes power, if done fast*. If the mill is so set as to make *samp*, that is, to reduce the grain as to leave none larger than half a grain of wheat, and a great part of it fine, then Pitt's mill will do more than any thing ever heard of before. I think twenty bushels can be forced in one hour through one of them, if the ears are selected, and power enough is put on the mill. We have ground fifteen bushels without selecting the ears, but it was not ground fine enough. My opinion is, that it cannot be ground too fine, if it is fed raw; but if it is to be cooked, then, if not so fine, the only objection is, it will take longer to cook it.

"Pitt's mill will grind fine if the teeth are set fine,

and time is given for the process, but if you set it so as to grind as fine as common mills do, when they do their best work, you will not, probably, get more than from four to five bushels through it in an hour. As to the power required, I answer, the more the better, until you are able to sustain a motion of fifteen hundred revolutions a minute while you push the ears down hard for the teeth to get hold; but for a small business, this is not necessary. About the power of two horses would do good business.

"A mill owner, two miles from me, has expended probably \$1500 in erections for grinding corn in the ear, and I can, probably, grind two bushels to his one, and not \$200 invested. The only thing required to keep my mill in order, is, once in, say three hundred bushels, to grind the teeth and set them in the machine, perhaps an hour's work.

"Grinding has become quite an object with me since I purchased Pitt's mill. I intend to grind all my feed, and do as much custom work as I can get.

"As to feeding cob meal, my opinion is, that it is just the kind of food for working horses, and I feed it,

cooked, to my swine and cattle that I fat. I can grind it cheaper than I can thresh the corn."

Since the foregoing was written, I have been informed that Mr. Pitts has made a very important improvement in his mill, by dropping the bed plate and concave a little, by which means the feeding is more perfect and its powers very much increased.

The only objection to this mill, that I have discovered, which is the fault of several others; it requires the constant attention of one person to feed it, as only one ear can be put into the tube at once. When shelled corn, or oats and corn, are to be ground, a hopper with a tube to fit the mill is required. This tube should have a slide to regulate the feeding, otherwise the weight or pressure of the corn will retard the motion and lessen the speed.

The price of these machines is forty dollars, and may be had either of Mr. John A. Pitts, of Rochester, or at the Albany Agricultural Warehouse, of Luther Tucker, editor of the *Cultivator*.

C. N. BEMENT.

Albany, December, 1846.

"SCIENCE AND AGRICULTURE."

THE *Genesee Farmer* for this month, contains two columns of criticism, by Dr. LEE, editor of that paper, on an essay prepared by me last winter, and published in the *Transactions of the State Agricultural Society*. I had concluded to pass this attack without remark; but it has been urged upon me that some explanation is needed, and is especially due to the committee who awarded a premium on that essay. The committee indeed are abundantly able to defend themselves from the implied censure in Dr. Lee's remarks; but then they ought not to be blamed for any omission of mine, altho' that omission would be readily supplied by the good sense of a candid reader.

It may perhaps serve as some apology for the essay, that it was hastily written for the *Transactions* referred to, without the remotest expectation or thought that it would be offered for the premium. Hence it was not guarded at every point against captious criticism; and hence in giving the compositions of some manures to show their relative strength, on the authority of the *English Agricultural Gazette*, I did not state, what is generally known, that such manures vary in composition. Scarcely indeed, should I have deemed such statement necessary, as the quotation was merely intended to convey a general idea for illustrating a principle. The composition there given may not be strictly correct, but I believed it near enough to show the great and general difference between common manure and guano; and I quoted it with less hesitation as it accorded nearly with the results of my own practice. I could not regard it therefore, as Dr. Lee does without any assigned reason, as a "humbug."

The practice of giving the result of a single analysis, as a general average, is common among the most eminent chemists; and Dr. Lee frequently does so himself, both by quoting the results obtained by others, and by assertions without authority, even of some substances which vary greatly in composition.* Hence the strong

phrases which he applies to my remarks, of "errors," "absurdities," "humbugs," "sweeping conclusions," and "gross perversion,"—would apply with equal force to his own writings.

Dr. Lee occupies nearly a column in controverting the fact that animals secrete highly fertilizing substances; and concludes by saying, "No farmer must expect his domestic animals to supply him with more or better manure, than their food and drink will furnish." According to this assertion then, the richest stable manure is no "better" than hay, straw, oats, and water, spread over the surface of the land—a ridiculous error, which every farmer must see at a glance.

I have thus shown the injustice of Dr. Lee's two charges; and that instead of proving errors against me, he has himself fallen into errors in the attempt.

I regret this indication of his hostility, for which I am not conscious of having afforded any cause. Indeed it is with much reluctance that I have consented to point out his errors, and have no wish for controversy of any kind.

J. J. THOMAS.

Macedon, 11 mo. 28, 1846.

GOOD SHEEP.—The *Maine Farmer* states that Mr. CHARLES PERLEY, of Woodstock, New Brunswick, has a flock of long-wooled sheep of the Leicester and Lincolnshire cross, 73 of which gave, at the last shearing, 524 lbs. 1 ox. of clean wool, being an average of over 7 lbs. per head.

BEECH-NUTS FOR POULTRY.—The *Maine Farmer* says that WM. HUTCHINSON, of Readfield, is in the habit of fattening troops of turkeys on beech nuts. He drives them, it is said, out into beech-groves, and there they feed themselves; and after being thus driven a few times, they will go of their own accord. They eat the nuts with avidity, and when they are killed, their flesh is said to be excellent, having a peculiar flavor given by this kind of food.

that some of the constituents which Dr. Lee names, vary 100 to 150 per cent in some cases. A still more striking case of variation is given by Johnston, on the authority of Hermbstadt, where the quantity of nitrogen in grain was increased nearly 400 per cent, merely by the application of certain manures.

The only difference between these cases from Dr. Lee, and that which he so strongly denounces in the essay, is, that he stated them entirely on his own authority, while I only copied from another work, naming the authority.

* Examples from Dr. Lee's writings could be furnished in abundance, but the reader will find several instances on pages 49, 50, and 51, of the same volume of the *Transactions* in which the essay in question was published. He there gives in part, the composition of several vegetable substances, without the slightest intimation of any variation in their ingredients, although such variation has been fully shown by the various analyses of Sprengle, Berthier, Davy, and others. These eminent chemists have proved

CONDENSED CORRESPONDENCE.

BOOK FARMING.

A correspondent with the signature of "VIATOR," and who dates at Coxsackie, states, that being not long since, on a visit at a friend's house, he partook of some excellent cheese—as good, he says, as he ever tasted. On inquiring into the process of its manufacture, he ascertained, that the person who made it had not much practical knowledge of the business, but had obtained through the medium of "the Encyclopedia," the only information she had received on the subject. He observes—"Cheese making is admitted to be one of those complicated processes, the success of which depends on a series of operations, partly chemical and partly mechanical, which must succeed each other in a certain order, very easily understood when seen, but somewhat difficult to be described in words. Still Mrs. C. learnt it in 'the Encyclopedia.' She had never seen cheese made when she first undertook to make it herself; and that her cheese is first rate, appears from the fact, that it has taken the first premium of the Greene county Agricultural Society, for two years. Now if this intricate business can be learnt in 'the Encyclopedia,' why cannot any of the other and more simple operations of the farm be so described in books as to enable any man of common sense to understand and practice them?"

PHRENOLOGY AS APPLICABLE TO THE HORSE.

Mr. THOMAS J. LEWIS, observes, that, while reading Dr. COMBE's celebrated work on Phrenology, his attention was particularly drawn to the article on page 205, in relation to the horse. "It is there shown," it is said, "that the shape of the brain, even in the lower animals, indicates their good or bad disposition. Almost every one," he continues, "is aware, that the value of the horse is very much enhanced by his being docile and tractable. According to the article alluded to, when the organ of benevolence is largely developed, the animal is mild and docile; when it is small they are vicious, ill-natured, and intractable. In the horse, the organ is placed in the middle of the forehead, a little above the eyes. When this region is hollow, a horse is invariably vicious and inclined to bite and kick. In mild and good natured horses, on the contrary, this part extends as far out as the eyes, or even farther.

"The driver of a cabriolet of Neuilly, says Dr. Gall, bought at a low price, a horse which nobody could use on account of its extremely bad temper; but it was an excellent runner. In the first week it bit off two of the driver's fingers and one of his ears. He attempted to correct the evil by redoubled blows, but these only rendered the animal more vicious. He then resolved to try the effects of gentle treatment, and this succeeded to a certain extent. The organ in question was very small in this animal; and the same conformation will be found in all horses which require to be muzzled to prevent them from biting."

CULTIVATION OF THE CRANBERRY.

[We have been furnished by the Rev. H. B. HOLMES, of Auburn, Worcester county, Mass., with the following extracts from a letter received by him from a friend, in regard to the culture of the cranberry.—Eds.]

"1st. You must not think of sowing the seed—but set out the roots.

"2d. You wish to know how to prepare the ground.

It is important that you contrive some way to prevent and destroy the growth of the grass and bushes, if there are any. This can be done either by plowing, burning, paring, or covering with gravel.

"3d. How to set out the roots. After the land is prepared, procure your roots in bunches about as large as it is convenient to take up with a common shovel. It is important to be careful in taking up the roots. Have a sharp shovel or spade, so as to disturb them as little as possible, and turn aside the vines, so as not to cut them off. Dig a place in your prepared ground about the size of your bunches of roots and set them in. You can have them about as near as hills of Indian corn usually are, or nearer if you please. The nearer they are the sooner they will cover the ground. They are not difficult to make live, but the better you prepare the ground, and the more carefully you set them out, the better they will flourish.

"4th. As to the time of setting them out. This may be done in the autumn or spring; but I should prefer the spring; because when set out in the autumn, the frost is apt to throw them out of their place. This however can be prevented by a little flowing. I should set them out as early as possible in the spring.

"5th. As to flowing. It is regarded as very important to be able to flow at pleasure. Supposing you set out your roots next spring; if you can flow them a little in the coming fall and winter, just so they may not be troubled by the frost and consequent heaving of the ground, they will come out bright and healthy in the spring.

"6th. During the summer when the vines are growing, and the fruit is upon them, it is important to look out for the weather, and if there is danger of frost, flush the water over the ground, so as to prevent the bad effects upon the vines and the crop. When you can flow at pleasure in this way, you are almost sure of a crop annually."

CLEANING SEED WHEAT.

EDS. CULTIVATOR—I do not recollect having seen published the method of cleaning seed Wheat, that is practiced by careful farmers in this county, and knowing that by this method Wheat can be made perfectly clean of chess, or cheat, as it is called here, together with all light grains of Wheat, or any other grain, the weight of which is less in proportion to its bulk, than good Wheat.

After the Wheat has been run through the fan or windmill, as we term it, prepare the mill by taking out the sieve and placing a shingle about eight inches wide in its place; next, detach the shaker (the technical term for which I do not know) and place a hand in its place, who is instructed to give gentle motion to the hopper, and to regulate the quantity of Wheat running through it. An able hand should turn the fan and produce a current of air strong enough to blow out every thing except the heaviest Wheat. The skreen should be open to remove sand or cockle, or any small grain that might run down; the process should be continued as long as there remains one grain of chess to a handfull of wheat. Farmers who have been cheated into a belief of the transmutation of Wheat, and suffer by it, are invited to try this method to clean their seed, and in connection with sowing clean seed, to take care that no cheat is carted on the land with the manure, or

fed to hogs or poultry, unless it is scalded or ground. All seeds of weeds or grass in the soil intended to be seeded, should be sprouted and destroyed by frequent plowings. *Chester Co., Pa.* A. B.

ON THE USE OF LIME.

In the September number of the *Cultivator*, is a communication from C. N. BEMENT, Esq., in which he assumes it as an established fact that "lime produces the greatest effect upon a limestone soil."

So far as my experience goes, the fact is directly the reverse. Ten years ago I put about 1,500 bushels of lime upon about 30 acres of strong limestone land; but I never could perceive the least advantage from it. I know of no better mode of improving this kind of soil, than by the application of stable manure, vegetable matter, sulphate of lime, and ashes. With the use of guano and ground bones, I have no experience.

The limestone rock of this valley is immediately covered by a thick bed of reddish clay. Where this clay approaches the surface, any coarse vegetable matter, such as chips, cobs, or the refuse bark from the tan-yard, is of use to loosen the texture of the soil. If this vegetable matter is not spread too thickly, it requires no fermentation—its acid properties being quickly neutralized by the lime in the soil.

In many places adjacent to the foot of the Blue Ridge, this bed of clay is covered with a thick deposit granite boulders, gravel, and fragments of talasse slate. In such places, a coating of this clay spread on the surface, is of very great advantage. Its chemical properties are probably similar to those of marl. Its effects on the soil are immediate and permanent; and I believe it would well repay the expense of applying it in large quantities.

In a communication in your October number, J. D. JONES, Esq., has related an ingenious experiment, which he has made in the improvement of worn-out soils. This experiment well deserves attention, but if Mr. Jones thinks it overthrows any of the arguments of Ruffin, he is, in my opinion, mistaken. Ruffin speaks of the *permanent* improvement of soils. His expressions imply that where land is poor, there must be some deficiency in the chemical constitution of the soil, and this deficiency must be supplied before it can become *permanently* productive. Mr. Jones has doubtless greatly improved his field, but will the improvement last? If he begins to take annual crops from his land, and permits his stock to feed off the surplus herbage, will it not soon be reduced to the same state in which he found it? Now, a coat of marl, such as Ruffin applied to the worn-out lands of Virginia, or a coat of green sand, such as is found in New Jersey, might benefit his land for fifty years, and enable the vegetable matter left upon it to produce far greater effects.

Yours, &c., E. B.

Smithsburg, Wash. Co., (Md.) Oct. 31, 1846.

RECENT AMERICAN PATENTS.

Reported for "*The Cultivator*," by Z. C. ROBBINS, Mechanical Engineer, and Attorney for procuring Patents, Washington, D. C.

Improvement in *Smut Machines*; Henry Staub, Martinsburg, Virginia, May 16th, 1846.

Claim.—"Having thus fully described the construction and operation of my machine for cleaning wheat; I would observe, that I do not claim the use of beating wings with roughened surfaces, for cleaning wheat of smut, garlic, &c.; but what I do claim, as my intention and desire, to secure by letters patent, is the giving the face of the beating wings of my improved smut machine, a rough and sharp cutting surface, by covering them with a series of saws, over-lapping each other,

(with their teeth projecting,) and arranged substantially in the manner herein set forth."

The above machine is simple and economical in its form and construction, and highly approved by millers.

GOOD CROP OF CORN.

EDITORS *CULTIVATOR*—Below I give you an account of a field of corn I raised this season, containing eight acres; the ground had been cleared some ten years, and used for pasture; it was plowed for the first time a year ago last summer, and left so rough that it was necessary to harrow it over five times before I could fit it for the plow this spring; then plowed once and harrowed three times, and planted on the 22d and 25th of May, in hills three feet and two inches apart, each way—when plowed, the field was completely covered with Canada thistles, which fact will satisfactorily account for the enormous amount of time spent in hoeing:

1st harrowing,	4 days,	10s	\$5,00
Plowing,	6 "	"	7,50
2d harrowing,	2½ "	"	3,00
Furrowing,	1½ "	"	2,00
Planting,	7 "	4	3,50
1st hoeing,	23½ "	"	11,75
2d "	21½ "	"	10,75
3d "	15½ "	"	7,75
Cutting up,	12½ "	6	9,56
Husking,	63½ "	4	31,75
Drawing stalks	6 "	12	9,00
Repairing fence	6 "	4	3,00

\$104,56

Making an expense of about thirteen dollars per acre, as an offset to which we have husked 1500 bushels of ears of corn, which being mostly an eight rowed yellow, with large kernels and small cob, I think will turn out fully 800 bushels of shelled corn, besides sixty loads of excellent fodder. Yours respectfully,

E. V. W. DOX

La Fayette, Onondaga, N. Y., Dec. 1st, 1846.

TILE DRAINING.

MESSRS. EDITORS—I notice in the *Cultivator* for November, page 330, in quoting Colman on tile draining, you say, an objection to this improvement in this country is the liability of the tiles to be broken by frost. In 1835, I sent for a tile from Scotland, for a pattern, and have since used a number, and have never known one broken by frost.

I had upwards of 70 rods of tiles laid over winter along side of a drain; winter with hard frost having come before I got them laid in, and they were as good as ever in the spring. When I see the like of you and Mr. Colman in error, it pleases me to set you right, more especially when the error may deter my brother farmers from such a beneficial improvement. The greatest objection to tile draining is the cost of the tiles, being three times the cost they are in Scotland; however I notice by the papers, that by the aid of machinery in Scotland, two men and a boy can make 11,000 tiles, fifteen inches long in a day. Of course, this must still reduce their price there very much, and I make no doubt some of our enterprising mechanics will immediately have the same plan of making them so that it will reduce the price here. Mr. Whartenby, at Waterloo, Seneca county, makes them as good as they do in Scotland; the price he charges is twenty cents per rod, and even at that they are cheaper than stones, and much better. I can have the drains dug here as well as they can be done in any country, but not quite so cheap. The digging of a drain 2½ feet deep, costs me about 5 or 6 cents per rod, by hiring men by the month, and not taking board into the account.

JOHN JOHNSTON.

MONTHLY NOTICES—TO CORRESPONDENTS, &c.

WE have great pleasure in being able to present the first number of the new volume of "THE CULTIVATOR," to our friends and the public, in a style which we think cannot fail to please. In its illustrations—in the beauty of its type,—the fineness of its paper, and the neatness of its execution, it can hardly be excelled. With the richness and variety of its contents, our readers can not fail to be gratified, containing as it does, contributions from many able pens, both at home and abroad, embracing a great variety of subjects of high practical value to the agriculturist. We trust the public will receive it as an evidence of our constantly increasing desire to aid in developing the agricultural resources of our country, and in elevating the character and standing of the American farmer.

Our arrangements for the future, are such as enable us to guarantee to our friends, that the character and interest of our pages will be fully sustained. Having made a permanent arrangement with Mr. SANFORD HOWARD, who has been for two or three years past associated with us, and who is so well known as one of the most sound and intelligent of American writers on rural subjects, his name will hereafter appear as one of the Editors, and Mr. H. will, in future, spend a larger portion of his time than heretofore, in visiting our farmers, that he may ascertain from personal examination, the improvements which are in progress in various parts of our country, and report them for the benefit of our readers. Mr. JOHN J. THOMAS, of Wayne County, we are happy in being able to say, will continue his contributions to the editorial department of the Cultivator, his articles hereafter bearing the signature of "T."

Grateful for the liberal appreciation our labors have hitherto received, we tender our friends the heartfelt congratulations of the season, and beg to assure them of our untiring devotion to the great work of agricultural improvement, in which we have been so long laboring, with such acceptance on the part of the public as has yearly encouraged us to new and more zealous efforts.

COMMUNICATIONS have been received since our last, from Elijah M. Davis, John Johnston, Thos. J. Lewis, Allen Coffin, Schuyler Worden, J. T., Charles R. Smith, Caius, George Colmer, S. B. Buckley, Nathan Howard, Viator, C. B. Stuart, the Son of a Subscriber, M. Y., E. V. W. Dox, W. H. Sotham, the Shakers, Peter Saxe, H. A. P., Rev. H. B. Holmes, S. Baldwin, H. A. Parsons, P. C. Schuyler, Prof. John P. Norton, Mary, C. N. Bement, J. B. D., E. N. Horsford, Wm. Bacon, J. Horsford, James Eaton.

BOOKS, PAMPHLETS, &c., have been received as follows:—

Analyses of Grains and Vegetables, &c. By E. N. Horsford, A. M. 12 mo. pp. 63. Boston. Munroe & Francis.

Analysis of the Oat. By JOHN P. NORTON, Farmington, Conn.—octavo, pp. 36. This is the essay which received the prize of \$250 from the Highland Ag. Society of Scotland, last year.

Transactions of the Ag. Society and Mechanic's Institute of New-Castle county, Delaware. 50 pages octavo.

Annual Report of the Commissioner of Patents for 1846. From Hon. JOHN A. DIX.

The Agricultural Magazine and Journal of Scientific Farming, for the months of April, May, September and October. London: Edited by F. CRISP, Esq., late one

of the Editors of the London Farmer's Journal. [We should be glad to receive the Nos. for June, July and August.]

Dombey & Son. Part 2. By CHARLES DICKENS. With illustrations by H. K. Browne. From the publishers, Messrs. Lea & Blanchard, Philadelphia.

Chemistry of the Four Seasons. By THOMAS GRIFFITHS, professor of Chemistry in the Medical College of St. Bartholomew's Hospital, London. pp. 450. Philadelphia, Lea & Blanchard.

Memorial for a National Rail Road from the Missouri river to the Pacific Ocean. By GEORGE WILKES. Pamphlet, 24 pages.

Report on Horticulture, at the late Fair of the American Institute. By THOMAS BRIDGMAN.

The Science of Agriculture; an Address delivered before the Middlesex county (Conn.) Ag. Society. By Prof. JOHN JOHNSTON. And the Sentinel and Witness newspaper, containing the Reports of the committees of the same Society.

THE communication from Mr. SAXE, will be given in our next, accompanied by a portrait of "Lady Messenger" and her colt.

J. T.—We will endeavor to make room for you next month.

WE are indebted to the Shakers at New Lebanon, for the plans and elevation of their barn, a description of which was given in our last volume, page 305. The drawings are on too large a scale for our paper, or we should be glad to insert them. We may be able to use them hereafter.

AGENTS—With our last number, we sent prospectuses for the present volume of the Cultivator, to all those who have heretofore aided us by acting as agents. We shall feel under great obligations, if they will make such efforts, as their convenience will permit, to procure a renewal of subscriptions, and to increase, as far as possible, their lists. The products of the farm now bear a fair price, and it appears to be a favorable time for an effort to increase the circulation of such works as the Cultivator.

HEARLE'S CEMENT.—Will "ZEA," of Montreal, have the goodness to furnish us with the mode of making this composition?

PEAS AND OATS.—"A SON OF A SUBSCRIBER"—(Boston.) We know nothing more in regard to the crop of peas and oats, spoken of in our December number, than what was there given. The practice is, to harvest the peas and oats at the same time, and thresh them together.

CRANBERRIES.—"D. C."—(Parkersburg, Va.) We would direct your attention to an article on this subject in this number.

STRAW AND STALK-CUTTER.—"P. C. S."—(Ithaca, N. Y.) We think HOVEY's spiral cutter would not be liable to the objection of clogging, of which you speak: but as you want a machine, chiefly for corn stalks, to be worked by horse power, we think you would be well suited with the "Pennsylvania cutter," so called, the price of which is \$25. See advertisement in this number.

CLOVER-SEED AND CLOVER-HULLING MACHINE.—"O. H. S." (Canton, N. Y.) We believe from three to five bushels of clean seed, per acre, is considered a good crop. The prices of machines for cleaning, is, from \$20 to \$60, according to their size, and the work

they are capable of performing. They are made by T. D. BURRALL, of Geneva, and by A. WHEELER & BROTHERS, Chatham 4 corners, Columbia Co., N. Y.

CORRECTION.—In Mr. Prince's article on strawberries, in our November number, the *crimson cone*, was stated to be staminate. We are informed that it is pistillate.

Under the head of DOMESTIC ECONOMY, we give this month several communications, with which we have been favored by our female correspondents. We shall continue this as a separate department, and shall at all times feel obliged for any contributions in reference to household concerns.

ORANGE QUINCES.—We accidentally omitted to acknowledge in our last, the reception of a dozen very large and beautiful Quinces from Mr. BRADFORD WALKER, of Canandaigua. Finer specimens of this fruit, we never saw. We are also indebted to SAMUEL HAMILTON, Esq., Rochester, for a bushel of the Portugal Quince.

SUPERIOR SWINE.—We have before spoken of the stock of swine kept at the Insane Hospital, Worcester, Mass., known as the "Hospital breed." Two very fine breeding sows have lately been procured from the Hospital, and brought into this neighborhood. They

are about as nice a *model* in form and points, as anything we have seen of their species. We have no doubt their introduction here will be highly beneficial.

TO EMIGRANTS.—Such of our readers as contemplate removing to the west, are referred to the advertisement of some fine land in Illinois, which will be found in this paper, which will be sold in lots to suit purchasers, at low rates and on favorable terms.

ROOT OR VEGETABLE CUTTERS.—"J. B.," (Washington, D. C.) The best machine we have ever seen for cutting vegetables for stock, especially for sheep, is GARDNER'S, an English invention. It cuts the roots in pieces, or rather strips, three-fourths of an inch wide by half an inch thick, and at the rate of a bushel per minute, with one hand. Its cost in England is about £5, or \$25. Mr. THOMAS NOBLE, of Massillon, Ohio has several of them in use. The best machine for this purpose, made in this country, as far as we know, is RUGGLES, NOURSE & MASON'S. It cuts into pieces one and a quarter inch square, by any thickness desired, and with great rapidity. The price is \$12. It is for sale at the Albany Agricultural Warehouse. See advertisement.

THE MARKETS—FOREIGN AND DOMESTIC.

By the *Cambria*, arrived at Boston on the 16th ult. we have English papers to the beginning of December. The intelligence in regard to the demand for breadstuffs, has not had much influence on our market. The English trade was animated and prices were maintained; but the supply of provisions in Europe is greater than what was at one time expected. The potato disease is said to have been less destructive on the continent last year, than in 1845, and potatoes were being sent to England from St. Petersburg. The wheat harvest is said to have been magnificent in the ancient Polish provinces, and in those districts of Russia and other countries which supply Odessa, and the ports of the Black sea, and as the people of Poland and Russia live chiefly on rye, it permits nearly all the wheat to be exported. The peasantry in some parts of Ireland are still suffering from want of food; but it is stated that the progress of destitution has been less rapid and destructive than some accounts might have led us to expect. Corn and provisions of all kinds, were becoming more abundant. The destitute peasantry were being employed on the public works to a great extent, 150,000 being already engaged, and the number increasing rapidly. An English paper gives the following table of the stores of Grain in the principal Entrepôts of Europe, in the last fortnight of October;

Nice...qrs. [of 8 bushels]	20,793	London.....qrs.	149,700
Genoa.....	22,083	Liverpool.....	131,010
Leghorn.....	25,296	Glasgow.....	53,727
Amsterdam.....	431,021	Leith.....	40,077
Rotterdam.....	46,224		
Hamburgh.....	18,300	Total.....	998,274
Dantzic.....	90,000		

The cotton and wool trade, (except for very coarse wools) was said to be brisk; but in the manufacturing districts trade was represented as exceedingly dull.

The *Mark Lane Express*, of November 30th, states, that 36 bales of "United States wool" were sold at public auction in London, on the 25th of that month, at 1s 1d, to 1s 2½d, or 27 to 30 cts. per lb.

The same paper states, that the imports of Wool into London, for the week ending Nov. 30th, were 3,576 bales. Of this quantity 2,363 were from Russia, 514 from Sydney, 337 from Germany, 160 from Spain, 30 from Italy, 41 from the Cape of Good Hope, 7 from Austria, 55 from Calcutta, 26 from the United States, 3 from France, and 40 from Monte Video.

Inquiries are sometimes made in regard to the relative value of different kinds of wool in the English markets. The following extract from a table which we find in the *Quarterly Journal of Agriculture* for October, shows the prices of Merino, South Down, Leicester and Cheviot:—

	s.	d.		s.	d.
Merino,.....	14	0	to	20	0
" in grease,.....	12	0	to	16	6
South Down,.....	14	0	to	20	0
Leicester Hogg, yearling,	12	6	to	19	6
" Ewe & Hogg,.....	11	6	to	16	6
Cheviot white,.....	10	6	to	14	6

From this it appears that Merino wool, washed, was worth from 25 to 35 cts. per lb.; South Down the same; and Leicester Hogg, (or yearling's,) fleeces, 23 to 34 cts. per lb.

PRICES OF AGRICULTURAL PRODUCTS.

.....

New-York, Dec. 19, 1846.

FLOUR—Genesee, per bbl, \$5.56½a\$5.62½—Ohio and Michigan, \$5.37½a\$5.44.

GRAIN—Wheat, inquired for, and \$1.25 per bushel demanded for Genesee, but no sales reported.—Rye \$4 c.—Barley, 65c.—Oats, 39a40c.—Corn, Northern and Jersey, 75a80c.—market closed firm at 80 c. Purchases mostly for England.

BUTTER—Orange County, per lb., 16a18c.—Western dairy, 13a15c.—Ohio, 8a9c.—Shipping, 6½a7c.

CHEESE—Best shipping, per lb., 7a7½c.

BEEF—Mess, per bbl., \$8a\$8.25—Prime \$5 75a\$5.87½.

PORK—Mess, per bbl., \$10—Prime, \$8 1½a\$8.25.

HAMS—Smoked, per lb., 8a9 cts.

LARD—Per lb. 7½a8c —Ohio, 7½a7¾.

HEMP—Russia, clean, per ton, \$210—American, dew-rotted, \$90a\$95—American water-rotted, \$130a\$135.

HOPS—Per lb., first sort, 10a11c.—Second do., 8a11c.

TOBACCO—Connecticut, per lb., 10a11c.—Kentucky, 2½a4½c.

SEEDS—Flax, per bushel, \$1.25—Clover, per lb., 6½a7c.—Timothy not in demand.

COTTON—New Orleans and Alabama per lb., 8½a11½c.—Florida, 8½a10½—Upland, 8½a10½ cts.

WOOL—(Boston prices.) Dec 19:

Prime or Saxon fleeces, washed per lb.....	38a40 cts.
American full blood fleeces,.....	32a33 "
" three-fourths blood fleeces,.....	25a28 "
" half blood do.....	23a25 "
" one-fourth blood and common,.....	20a22 "

REMARKS.—The tendency of the news by the *Cambria*, has been to give flour a slight advance, and to render the holders of grain more firm. Cotton has advanced half-a-cent per lb. Butter of good quality is in demand. The demand for cheese for exportation is likewise good. Pork is doing better.

AGRICULTURAL READING.—Milton J. Ross, of Allen Co., O., says, in the Ohio Cultivator, "This year I had twenty bushels of wheat to the acre, from a field of forty acres—which for this region is a remarkable crop—and I attribute the extra yield *entirely to knowledge I have obtained by reading.* When I commenced farming, twelve years ago, my wheat crop was only six to eight bushels per acre." * * "Mr. Buel, in his life time, furnished me information, through his "Cultivator," in relation to making and using manures, that is worth to me, at least *five hundred dollars.* Mr. Buel also learned me how to raise one hundred bushels of potatoes from two bushels planting."

LIVE STOCK MARKET.

Brighton, Mass., Monday, Dec. 7.

At market 540 Beef Cattle, and 425 Stores, 8 yokes of Working Oxen, 30 Cows and Calves, 3,700 Sheep and Lambs, and about 700 Swine.

Beef Cattle.—Extra, at \$5.75—first quality, \$5 50—second quality, \$4.50—\$1 75—third quality, \$3.50—\$4.

Working Oxen.—Sales were made at \$62, \$67, \$70, and \$72.

Cows and Calves.—Sales were noticed at \$17, 18, 20, 21, 26, 28, 31, and \$42.

Sheep and Lambs.—Sales of lots at from 75c. to \$1.12, and \$1.03 to \$2.25.

Swine.—Sales at wholesale at 4½c. for sows, and 5½ for barrows. At retail from 5½ to 6c.

MACHINES AND HORSE-POWERS.

CORN AND COB CRUSHERS, several kinds, among which are Pitts', Sinclair's, and others.

PORTABLE GRIST MILL.—Fitzgerald's Patent Cone Burr Stone Mills, for wheat, corn, salt, coffee, &c.

HORSE POWERS, single and double, and Threshing Machines, with and without Separators.

SMITH'S PATENT CORN SHELLER AND SEPARATOR, for Horse Power, constantly on hand at the Albany Agricultural Warehouse and Seed Store, Nos. 10 and 12 Green-st., Albany.

LUTHER TUCKER.

Jan. 1.

TO NEW-YORK FARMERS AND EMIGRANTS.

ONE hundred and fifteen thousand acres Illinois Lands for sale, in tracts of 40, 80, 120, 160 acres, or more, to suit purchasers. The lands are all first rate, and among the very best in the state, and are situated in the counties most densely settled, viz. Morgan, Scott, Cass, Mason, Menard, Green, Sangamon, Logan, Christian, Mason, McLean, Woodford, and Macoupin. To actual settlers every reasonable indulgence will be given as to time of payment. The price from \$3 to \$5 per acre.

A correspondent of one of the New-York papers, writes respecting this section of Illinois as follows:

"Beardstown, Cass Co., Ill., Jan. 10, 1846.

THE RICHES OF THE WEST.—GOTHAMITES ON THE WING.—It is now six weeks since I left the city of Gotham, during which time I have seen considerable of this western country, and I must say the beautiful prairies of Illinois, far exceed what I had anticipated, and this country may truly be called the garden of the world. There is nothing to prevent farmers in this country from getting rich, as the land is the most fertile in the world, and it will produce everything grown in the vegetable kingdom.

"A New England man would hardly believe me if I tell him that some farmers here produce ten thousand bushels of corn, and half as many bushels of wheat in a year, to say nothing of cattle and hogs, of which some raise as many as five hundred head. One farmer told me that he raised the last year 6000 bushels of corn, and it was all produced by the labor of two men only.

"Cattle and sheep feed upon the prairies all winter, as they are seldom covered with snow."

Most of the above lands may be cultivated 100 years or more without manuring, being of the richest alluvial soil. The titles are indisputable, and the lands will be sold at low prices and in quantities to suit purchasers. Letters (post paid) addressed to D. B. AYRES, Esq., of Jacksonville, Ill., or the subscriber, will receive prompt attention. As many persons out of the state have an idea that the taxes are very burdensome in Illinois, we state that they range from \$1.50 to \$2.00 per annum, on 80 acres of land.

JOHN GRIGG,

Jan. 1, 1847.—6t

No. 9 North Fourth-st., Philadelphia.

TO WOOL-GROWERS.

THE subscribers have a tract of land lying in Patrick Co., Va., consisting of about ten thousand acres, which they wish to sell or rent. It has on it immense quantities of the largest timber, with abundance of water, and water power. A portion of the land has been cleared, and produces the finest grass in the world. We would like to dispose of it, or to enter into partnership with any gentleman who would furnish a flock of sheep, and go into the business of growing wool. Apply by letter to either of the subscribers, at Cumberland Court House, Va., or in person to Col. A. Staples, Patrick Co., Va., who will show the land.

WILLIAM W. WILSON
WILLIS WILSON.

Sept. 1 6t

NEW-YORK AGRICULTURAL WAREHOUSE.

(ON COMMISSION.)

A. B. ALLEN, 187 Water-st.—Farming Implements and Seeds, Wire Cloths and Sieves; Fertilizers, such as Guano, Lime, Plaster of Paris, &c.; Fruit and Ornamental Trees and Shrubs; Improved Stock, Horses, Cattle, Sheep, &c.

Editor of the American Agriculturist, a monthly publication of 32 pages, with numerous engravings. Price \$1 a year. Jan. 1—2t.

NEW ORLEANS AGRICULTURAL WAREHOUSE.

THE subscriber will keep constantly on hand for sale farming and plantation implements, of all kinds suitable for the southern market. He will also execute orders for improved stock, such as horses, cattle, sheep, &c., and receive subscriptions for the American Agriculturist, a monthly publication of 32 pages, with numerous engravings. Price \$1 a year. R. L. ALLEN.

New Orleans, Jan. 1, 1847.—2t

THE FRANKLIN HOUSE,

No. 105 Chestnut-street, between Third and Fourth. Philadelphia.

THIS popular and central hotel, established by the Messrs. Sanderson, having passed into the hands of the subscriber, he desires to inform his friends and the public, that it is now open for the reception of guests.

To those who have visited "THE FRANKLIN HOUSE," its advantages as a desirable stopping place are well known; to those who have not, it will only be necessary to state that it is situated in the busiest part of the most fashionable street, in the immediate vicinity of the Exchange, Post Office, Banks, Custom House, Places of Amusement, Hotels, Steamboat Landings, Railroad Depots, Public Squares, Court Houses, &c., &c.

Since the change of proprietors, a large amount of money has been expended in enlarging, refitting, refurnishing and painting. Among the numerous improvements, may be mentioned improved entrances, a new Ladies' Ordinary, a new Gentlemen's Dining Saloon, new parlors, new chambers, new kitchen, and new bar-room, besides many other minor improvements.

The principal features of a first rate hotel, "the Table and Wine Cellar," will be under the management of Mr. JAMES M. SANDERSON, one of the former proprietors, whose ambition to excel as a caterer is well known. His widely celebrated Cook "Pelletier," aided by experienced assistants, will still continue to be his right hand man.

The office and books will be under the charge of Mr. GEORGE P. BURNHAM, late the able editor of the "Daily Ohio Union," of Cincinnati, and more recently of Boston. In short, great exertions have been made, and hereafter will not be spared, to render "The Franklin" one of the VERY FIRST hotels for comfort, convenience, and good living. D. K. MINOR.

Philadelphia, Jan. 1, 1847.—1t

I. T. GRANT & CO.'S PATENT PREMIUM FAN MILLS.

THE subscribers, manufacturers of these celebrated mills, having enlarged their manufacturing establishment, hopes to be enabled hereafter to supply promptly the rapidly increasing demand for that article. These mills have been repeatedly tried, and the principle upon which they operate thoroughly examined and tested by committees appointed by the State Agricultural Society, and in every instance have been declared greatly superior to any that have come in competition with them. They have taken the first premium at four of the New-York State Agricultural Fairs, (being all at which they have been exhibited,) and at the State Fairs in Pennsylvania and Maryland. Our mills took the first premium, and we were awarded a silver medal for the new improvement, at the Fair of the American Institute in 1846, and they received the highest consideration at the great National Fair, recently held at the city of Washington. Wherever they have been exhibited, they have received the unqualified commendation of agriculturists, and are believed to be the only mills ever invented or manufactured, that will chaff and screen wheat perfectly clean (and at the rate of one bushel per minute) at one operation, taking out the chaff, cockle, and smut at the same time. They will also thoroughly clean all other kinds of grains and seeds by running it through once. We manufacture four sizes, varying in price from \$21 for No. 1, to \$27 for No. 4, and have no hesitation in warranting them superior to anything of the kind now in use.

We also manufacture very superior Grain Cradles, which have taken the first premium wherever exhibited.

Our Fan Mills and Cradles are for sale at factory prices at the following places:

John Mayher & Co., 195 Front-st., New-York.

E. Whitman, 55 Light-st., Baltimore;

Denslow & Webster, Savannah, Geo.;

Fitzhugh Coyle, Washington City;

Baggs & Parsons, Springfield, Mass.;

Pierce, Sweet & Co., Burlington, Vt.;

J. W. Howes, Montpelier, Vt.;

Luther Tucker, 10 and 12 Green-st., Albany, N. Y.

H. Warren, Troy;

J. S. & J. Brown, Newburgh.

Orders thankfully received and promptly attended to, and all goods delivered at Troy, N. Y., free of charge.

I. T. GRANT & Co.

Junction P. O., Rens. Co., N. Y., Jan. 1.—1t

DOWNING'S WORKS.

VALUABLE WORKS, by A. J. Downing, Esq. *The Fruits and Fruit Trees of America*, or the Culture, Propagation, and management of the Gardens and Orchards of Fruit Trees generally; with descriptions of all the finest varieties of fruit cultivated in the country.

1 thick vol. 12 mo., with many engravings. \$1.50. Or a superior edition in large 8 vo., to match the author's other works. \$2.50.

"This is the most valuable of all the books which Mr. Downing has contributed to the higher departments of our rural literature, and it is the most charming book of the season. Some idea may be formed of its completeness from the fact of its containing a list of no less than 490 sorts of apples. Mr. Downing claims the right to talk about fruits and trees from having been born in 'one of the largest gardens, and upon the banks of one of the noblest rivers in America;' everybody will concede the right since he has shown himself so competent to the task."—*Broadway Journal*.

"This is a valuable practical work, and every orchardist and every fruit-grower should possess himself of its stores of information."—*U. S. Gazette*.

A Treatise on Landscape Gardening; adapted to North America, with a view to the improvement of country residences. Comprising historical notices, and general principles of the art; directions for laying out grounds, and arranging plantations; descriptions and cultivation of hardy trees; decorative accompaniments to the house and grounds; formation of pieces of artificial water, flower gardens, etc.; with remarks on Rural Architecture. New edition, with large additions and improvements, and many new and beautiful illustrations. 1 large vol. 8vo. \$3 50.

"This volume, the first American treatise on this subject, will at once take the rank of the standard work."—*Silliman's Jour.*

"Downing's Landscape Gardening is a masterly work of its kind,—more especially considering that the art is yet in its infancy in America."—*Loudon's Gardener's Magazine*.

Designs for Cottage Residences; adapted to North America, including Elevations and Plans of the Buildings, and designs for laying out Grounds. 1 vol. 8vo., with very neat illustrations. Second edition, revised. \$2.00.

A second edition of the "Cottage Residences" is just published, as Part I; and it is announced by the author that Part II., which is in preparation, will contain hints and designs for the interiors and furniture of cottages, as well as additional designs for farm buildings.

Gardening for Ladies; and Companion to the Flower Garden. Being an alphabetical arrangement of all the ornamental plants usually grown in gardens and shrubberies; with full directions for their culture. By Mrs. Loudon. First American, from the second London edition. Revised and edited by A. J. Downing. 1 thick vol. 12 mo., with engravings representing the processes of grafting, budding, layering, &c., &c. \$1.25.

"A truly charming work, written with simplicity and clearness. It is decidedly the best work on the subject, and we strongly recommend it to all our fair countrywomen, as a work they ought not to be without."—*N. Y. Courier*.

"This is a full and complete manual of instruction upon the subject of which it treats. Being intended for those who have little or no previous knowledge of gardening, it presents in a precise and detailed manner, all that is necessary to be known upon it, and cannot fail to awaken a more general taste for these healthful and pleasant pursuits among the ladies of our country."—*N. Y. Tribune*.

Published and for sale by **WILEY & PUTNAM,**
Oct. 18.—31 No. 161 Broadway, N. Y.

Messrs. W. & P. will publish shortly, *Wightwick's Hints to Young Architects*. Edited with additions, by A. J. Downing.

Also, a new edition of *Lindley's Horticulture*, edited by A. J. Downing, and Prof. A. Gray.

AGRICULTURAL WAREHOUSE.

183 Front-st., New-York.

THE subscriber offers for sale an extensive assortment of Farming and Gardening utensils, consisting in part of plows of Freeborn's, Minor's, Horton & Co.'s, Prouty & Mears', and Ruggles, Nourse & Mason's patterns. The Locked Coulter, and Wrought Share Plow.

Corn Shellers, Fanning Mills, Grain Cradles, Corn and Cob Mills, Straw Cutters, of Greene's, Hovey's, Eastman's, and other most approved patterns.

Horse Powers, Threshing Machines, &c. Gin gear, Mill, Horse-power, and all other castings, constantly on hand. Also a general assortment of Brass, Copper, and Iron Wire Cloth, for Paper, Rice, and other mills. Seives, Screens, Riddles, &c., &c.

Persons ordering articles from the subscriber may depend upon having them made of the best materials and in the most workmanlike manner.

JOHN MOORE.

New-York, Oct. 1, 1846—6

AMERICAN HERD BOOK.

CONTAINING pedigrees of Short Horn cattle, to which is prefixed a concise history of English and American Short-Horns, compiled from the best authorities; by LEWIS F. ALLEN. This valuable book contains the pedigrees of about six hundred cattle, and it should be in the hands of every breeder of Short-Horns. A few copies for sale at the OFFICE of the CULTIVATOR.

Oct. 1.

WIRE CLOTH SIEVE AND SCREEN MANUFACTORY.

THE subscriber has constantly on hand a large assortment of the above articles, which he offers at the lowest market prices.

D. L. CLAWSON.
July, 1846—10 mos. 191 Water-st., New-York.
P. S.—All kinds of wire work manufactured to order.

NOTICE.

THE undersigned expects to return from his journeyings in the southern states about the 1st February next, when he hopes to be fully prepared to meet and fill all orders in his line, particularly for his "Warren Horse Powers and Threshers," now so much and perfectly improved, his "Hand Threshers," and the "Trimble Horse Powers," and the Endless Chain Horse Powers—also for the "Platt's Improved Portable Burr Stone Mills,"—together with Ploughs, Castings, Corn-Shellers, &c., &c. In the mean time, however, all orders will be promptly attended to, as usual.

JAS. PLANT, 5 Burling slip, N. Y. City.

Nov. 1—31.

KENDALL'S CYLINDER CHURNS.

THE following in relation to the above churns, from a firm in Vermont, who purchase of us, will show in what estimation the cylinder churns are held.

"We wrote you a few days since, to forward three each of the two smallest size churns. Please send us immediately six each of three sizes. Churns are getting in good demand. Our people think there is quite a saving when they can fetch the butter in two minutes, instead of churning two hours with the old fashioned churn. The Kendall churn is getting to be all the go."

The above churns are always for sale at wholesale or retail, at the Albany Agricultural Warehouse, Nos. 10 and 12 Green-st.

LUTHER TUCKER.

GUANO.—200 tons, the balance of the ship Shakspeare's cargo from Ichaboe, in tight casks, for sale in lots to suit purchasers, by

E. K. COLLINS & Co., 56 South-st.

The many experiments made this season from this cargo, not only prove the great gain in using it, but that it is at least equal if not superior to any other guano.

Sept. 1, 1846.—if

"SANFORD'S PATENT STRAW CUTTERS."

THE subscriber has just received a quantity of these superior machines, made in a superior manner. A few also for Cutting Stalks.

JAS. PLANT, Sole Agent,
Dec. 1—21. No. 5 Burling Slip, N. Y. City.

WILD TURKEYS.

FOR sale, two pair of wild turkeys—one pair of which were sent from Illinois in the fall of 1844, and the others were reared from them the present year. They are well domesticated, and are splendid birds. Price, \$10 per pair. Inquire at the OFFICE of the CULTIVATOR.

Dec. 1—21.

NEW-ENGLAND AGRICULTURAL WAREHOUSE AND SEED STORE.

Nos. 51 and 52 North Market-Street, Boston.

FOR sale at this establishment, a general assortment of Agricultural and Garden Implements—Howard's Improved Patent Cast Iron Plows of all sizes. Martin's improved Eagle and other Plows; Double Mould Board, Side-Hill, Paring, and other plows, in great variety, and of the most approved patterns. Howard's Subsoil Plows, Cultivators of different descriptions; Willis' Seed Sower, (the best in use;) Geddes' and other Harrows of various patterns; Green's Straw-Cutters, Willis' Straw-Cutters, of various kinds and prices; Gault's Patent Churns, Grindstones or Friction Rollers; Cast Iron Field Rollers, (a very superior and substantial article;) Garden Rollers of cast-iron, different sizes, Iron Rakes of every size and variety; Garden Trowels, Syringes, in great variety; Pruning and Budding Knives; Pruning Scissors, and Shears in great variety; Grass Hooks and Garden Shears; Garden and Field Hoes of every pattern; Scufflers every size; Pick Axes, Shovels, Spades, Dung and Garden Forks of every description; Hay Tools, including the very best Scythes manufactured in the country, (in all cases warranted;) Hall's and other Hay Rakes, Pitch-forks, Grain Cradles, Horse Rakes, Sickles, Austin's Rifles, Whet Stones, &c., &c.

Also a complete assortment of Chains, viz:—Fence Chains—Trace do.—Ox do.—Dog do.—Tie-up do. Hale's Horse Power; Hale's Threshing Machine and Winnowing Mills, Garden Engines, &c.

Also Axes, Hatchets, Bill Hooks, Hammers; Axe, Hoe, and Rake Handles; Ox Yokes, Bull Rings; together with every other article important for Agricultural or Horticultural purposes. Harris' Paint Mill, the best in use, is also for sale at this establishment.

SEEDS, TREES, AND PLANTS.

The subscribers are enabled to furnish seeds of the purest quality, of every variety of field, vegetable, and flower seed; embracing every variety desirable for cultivation.

Also, Fruit, Forest, and Ornamental Trees and Shrubs, of every description.

Also Hardy Herbaceous Plants; Roses, embracing 500 of the best varieties; Bulbous Roots in great variety. Green-House Plants, Grape Vines, &c.

Orders promptly attended to **JOSEPH BRECK & Co.**
Boston, Sept. 1—4.

**ALBANY AGRICULTURAL WAREHOUSE,
AND
FIELD AND GARDEN SEED STORE.**

Nos. 10 AND 12, GREEN-ST., ALBANY.

THE Subscriber having become the proprietor of the stock and trade of the Albany Agricultural Warehouse, recently carried on by the firm of E. Comstock & Co., has removed the establishment to the spacious stores Nos. 10 and 12 Green-street, (four doors from State-street, and near the center of the city,) where he has made such arrangements as will enable him to offer for sale a most complete assortment of the most approved

**Agricultural Implements, Machines, Tools, &c.,
together with every variety of**

Field, Garden, and Flower Seeds,

all of which will be sold on as reasonable terms as at any establishment in the country.

Among the assortment of that most important implement, the Plow, may be found a great variety of the celebrated

Eagle, Side-Hill, Subsoil, and other Plows,

from the manufactory of Ruggles, Nourse & Mason, of Worcester, Mass. Also, as large an assortment of the noted

Center-Draft, Side-Hill, Subsoil, and other Plows,

from the manufactory of Prouty & Mears, of Boston. The plows from both these establishments are extensively known and highly approved by all who have used them. Both kinds will be sold at the manufacturer's home prices.

A general assortment of other Plows, (among them Delano's Diamond,) adapted to different soils and modes of culture, constantly on hand.

Langdon's Cultivator Plow, Bement's Improved, and common Horse Cultivators.

Lewis' Patent Seed Planter, manufactured expressly for the subscriber, and which is believed to be best in use—price \$15.

Bachelor's Patent Horse Corn Planter, capable of planting from six to ten acres a day—price, \$15.

English Brush Drill Barrow, for small seeds, —price \$12—with extra hopper for Corn, Beans, Peas, &c., for hills or drills, \$15.

Geddes' Improved Harrows, five sizes—from \$3 to \$15. Also, Folding and A. Harrows, various sizes and manufacture.

Hovey's Patent Spiral Straw Cutter, for hand-power, five sizes, from \$10 to \$25. Rigged for horse-power, \$1 to \$2 extra.

Also, Steven's Spiral Hay and Cornstalk Cutter, ten sizes, from \$8 to \$20—rigged for horse power, \$1 to \$2 extra.

Grant's Celebrated Fan Mills, the best in use, four sizes, \$21 to \$27. Also Elliott's Fanning Mills, for small seeds, from \$10 to \$12.

Burrall's Hand Corn Sheller and Separator, a new and very compact machine, one of the very best in use. Also Clinton's Hand Corn Sheller, which shells very rapidly, but does not separate the corn and cob, a cheap and durable machine.

An extensive assortment of Harvesting and Haying Tools, such as Revolving and Hand Rakes, Grant's Cradles, Scythes, Snathes, Hay Forks, of the most approved kinds, Quinnebaug and Cummington Scythe Stones, Rifles, Sickles, &c., &c.

Manure Forks, Shovels, Spades, and Hoes, by the dozen or single, from the best manufactories in the country.

Root and Vegetable Cutters, several kinds, including one suitable for cutting for sheep, the best machine for the purpose in use.

Wheelbarrows, of different sizes and kinds. Contractors and dealers furnished on liberal terms.

A good assortment of Dairy Furniture, as Churns of various kinds, including Kendall's Cylinder, five sizes, from \$2 to \$5, the most approved churn in use—also Gault's, Dash, and others. Tubs, Pails, Butter Ladles and Workers, &c., &c.

Ox Yokes and Bows, Draft, Trace, Stake, Halter, and, Tie-up Chains, Ox-Balls, Horse and Cattle Cords, Brushes, Currycombs, Bar-Pins, a new article, &c., &c.

Grass, Field, Garden, Herb, and Flower Seed
a great variety, both of foreign and domestic growth.

Jewett's Improved Dutton Corn, and other choice varieties. Hall's Early June, Carter, and other Potatoes, together with every article usually kept in such establishments, to all of which the attention of the public is respectfully invited.

LUTHER TUCKER.

Albany, Jan., 1847.

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THE CULTIVATOR

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Of whom single numbers, or complete sets of the back volumes, can always be obtained.

Two editions of The Cultivator are issued—one without covers and unstitched, which, by the decision of the Postmaster General, is subject to newspaper postage only—the other, stitched in printed covers, the postage of which would be 3½ cents per number. The covered edition is never sent by mail, except particularly requested.

ADVERTISEMENTS inserted in the Cultivator, at the rate of \$1.00 per 100 words, for each insertion.

FARMER WANTED.

WANTED a man with his wife, (one without children would be preferred,) to take charge of a farm of about 200 acres, in one of the pleasantest districts in New-England. The wages would be good and the situation probably a permanent one. Address, (post-paid,) box No. 1668, Post Office, Boston.
Jan. 1—2t.

ALBANY AG. WAREHOUSE.

DISSOLUTION.—The co-partnership heretofore existing between the subscribers, under the firm of E. COMSTOCK & Co. is this day by mutual consent dissolved. The affairs of the firm will be settled, and the business continued by LUTHER TUCKER.

Albany, Sept. 9, 1844.

ELON COMSTOCK.
LUTHER TUCKER.